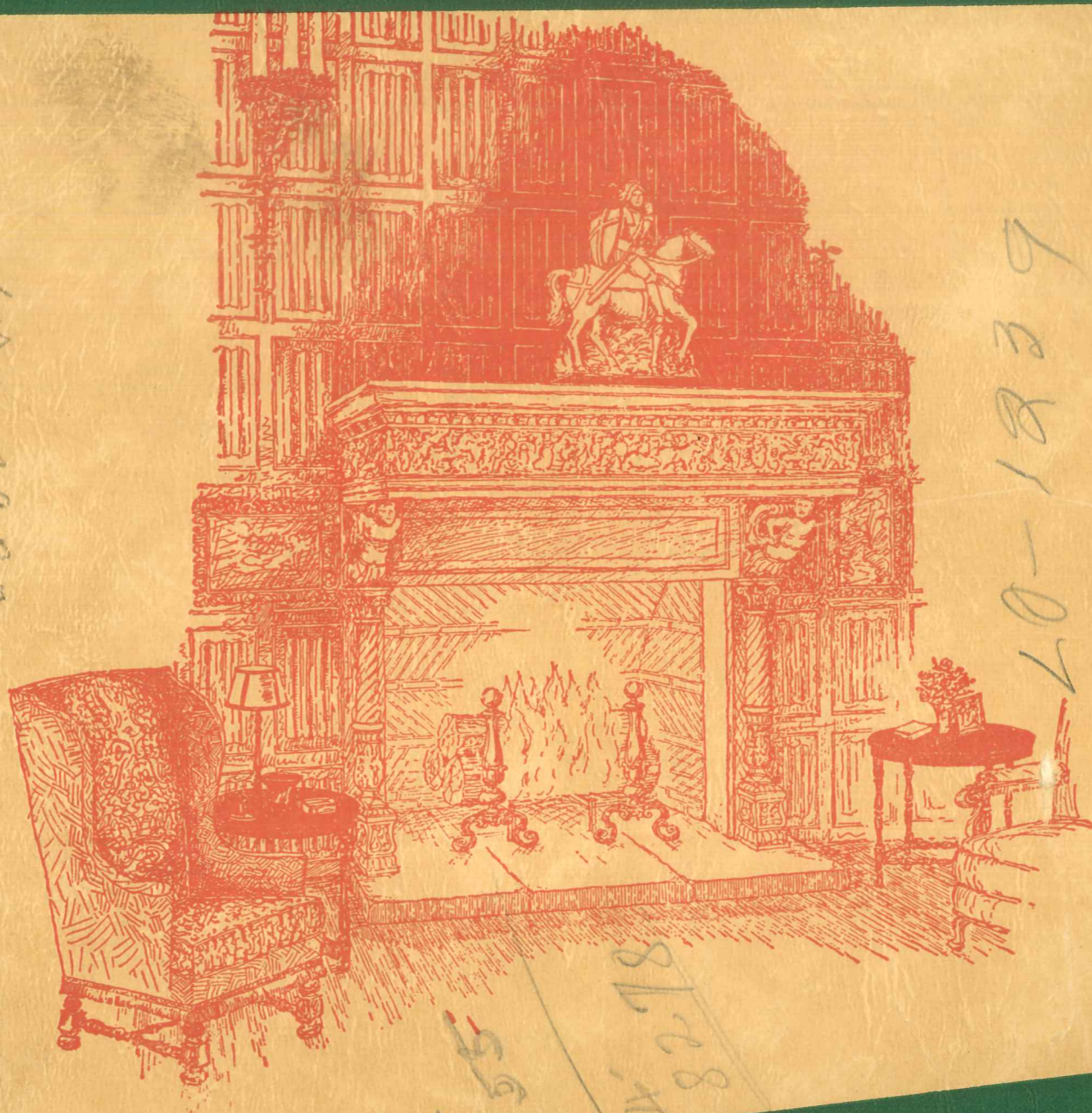


BOOK OF

SUCCESSFUL FIREPLACES

HOW TO BUILD THEM



PRICE 50¢
THIRTEENTH EDITION

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The Fireplace

*Let my glowing embers warm your heart to all
the world.*

*Light your fire and never fear,
Life was made for love and cheer.*

—Henry Van Dyke: "The Hearthstone."

Fireside enjoyments and home-born happiness.

*Better a wee fire to
Than a big fire to b*

*When there's room
There's room at the*

*Grande Chere et Bec
Good cheer and a br*

*Shut in from all the
Content to let the no*

Best Wishes for Fireside Happiness

IT IS ALWAYS PLEASANT to greet people interested in Fireplaces. So we are happy to comply with your request for a copy of **The Donley Book of Successful Fireplaces.**

We hope you will find pleasure in reading it and still more important that it will be helpful in assisting you in obtaining a Successful Fireplace.

Your building material dealer is willing to assist you. If we can help, let us know.

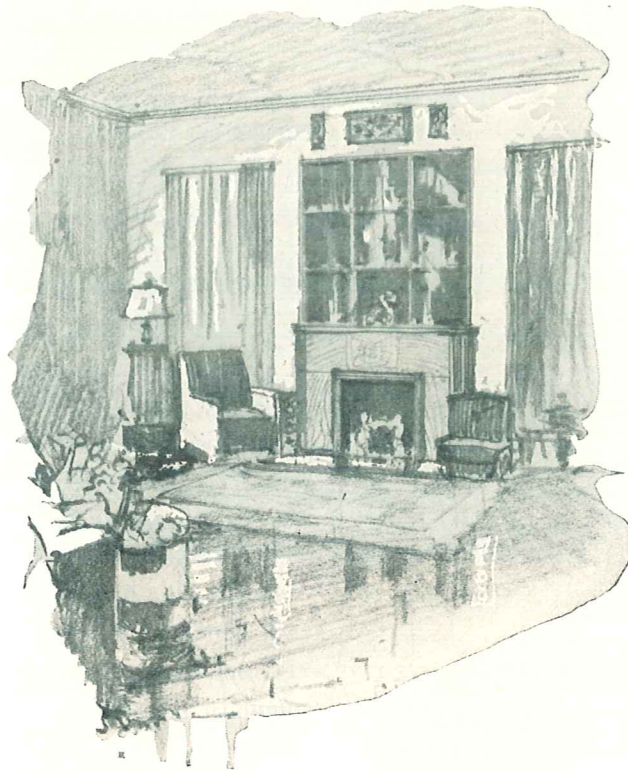
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BOOK OF SUCCESSFUL FIREPLACES

How to build them



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Fireplace in the home of Miss Alma VanEck, Bay, Ohio; Small, Smith and Reeb, architects.

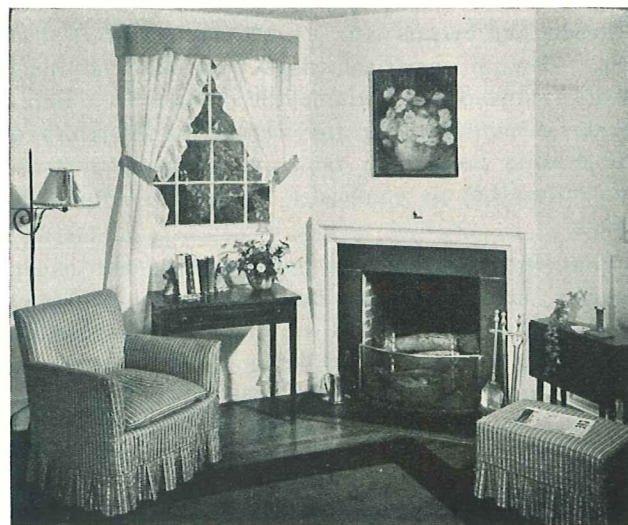
FACTORS IN FIREPLACE PLANNING

PLANNING the location, size and general character of your fireplace is a subject worthy of careful study from the time your home project begins to take shape. Several factors are involved, the first of which is, perhaps, the chimney. It is a definite feature of the exterior architecture. In some cases, its location is determined by the desirability of enclosing several flues in the same stack, including, perhaps, that of the basement heating plant. So the task of locating a fireplace is a work of co-ordination, in which utility and esthetic effect must each bear their due part.

Interior Planning—This includes consideration of proportions of the room as a whole, the way in which it will be used and the decorative scheme contemplated. Just as industrial plants are planned with reference to the sequence of operations, it is necessary for the designer of a home to enact, mentally, the experiences of those who will enjoy the fireplace, from the first glimpse on entering the room to the final relaxation of dozing, reading or chatting within the aura of its rays.

The Vista Effect—Many fine homes in the past have been planned with rooms in series, connected by double doorways, with a living room fireplace at the

end of the vista—a heart warming reminder to occupants of any rooms, so connected, of the repose and warmth awaiting them. Fireplaces so located tended toward ornate design with emphasis on mantel ornaments and on the picture framed above. This pattern has grown less mandatory in later decades, but the desirability of framing the fireplace in a spacious doorway, as one approaches the room, still has sanction.



While not ideal, the corner fireplace offers distinct charm to the compact interior of the present-day, low cost home, as exemplified in this view from the archives of Richard Averill Smith.

Trends in Design—While too stable an institution to be subject to whims of style, fireplaces participate in trends of domestic design. With the prevailing simplification of home life, it is not surprising to find more interest in the possibilities of the small fireplace. The compact, low cost home needs a fireplace in keeping with its prevailing scale. Such a fireplace need lack nothing in charm and comfort.

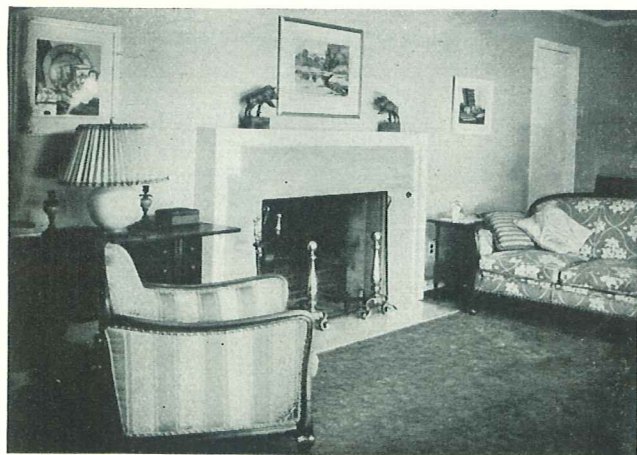
More corner fireplaces are being built because in many a compact interior the corner offers the one answer. There has been a distinct gain, too, in the merit and originality of corner fireplace designing.

Rustic and Early American period types are holding their own but otherwise there has been a lapse of interest in strict period treatments. In fact, designers are borrowing and simplifying whatever they like in the details of any period without being bound by its traditions. The grander and more severely classic types are seldom encountered for the reason that it is no longer customary to build homes of moderate size that imitate mansions. The colonial or English farmhouse is much more likely to be the basis of the prosperous suburban home of today.

Modernism is no longer the separatist cult of recent years. It has won many victories and feels that it can meet its old antagonists half way in creating effects whose sole aim is to be inviting, comfortable and homelike.

Side, End or Corner—The real consideration in locating a fireplace is the creation of an area of comfort and repose in the room, subject to the least disturbance from those moving about; commodious in its room for comfortable chairs and perhaps a couch; convenient in relation to books, to smoking facilities, or whatever fireside comfort may include.

Such roominess is most likely to be found at the side or end of a room. An end position is very likely to be preferable on grounds of seclusion. A side position may avoid cramping of furniture.



Fireplace in home of Mrs. Burnetta Carroll, Shaker Heights, Ohio.

SUCCESSFUL FIREPLACES



Modern fireplace in the suburban home of Lawrence Blazey, Cleveland artist, which he designed. The mural "Descent of Night", over the fireplace, is Mr. Blazey's work.

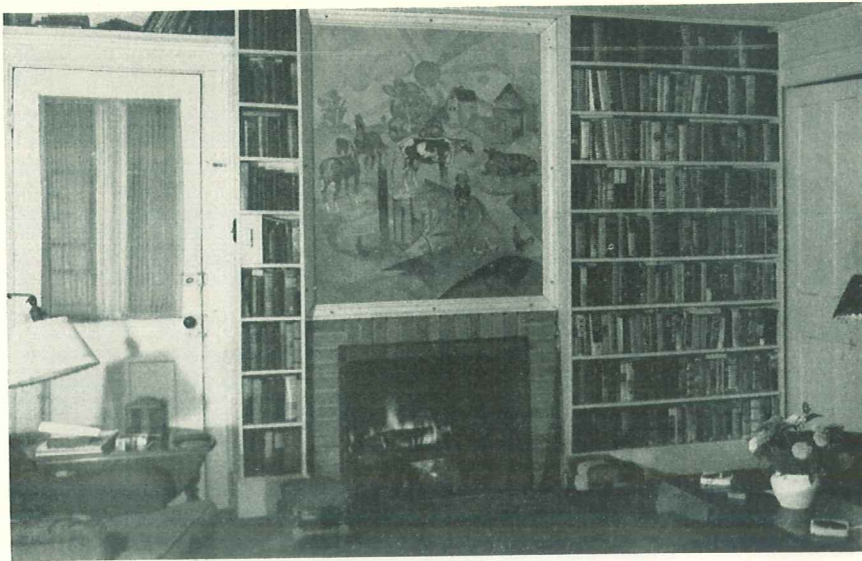
The sense of security and repose that goes with full enjoyment of a fire is impaired if there are doorways flanking the fireplace or even one doorway close to it. Similarly, windows in the range of vision impair concentration of interest on the fireplace. If needed for light, they may be located above the line of vision, flanking the chimney, and perhaps with book shelves below.

Question of Projection—A fireplace may stand flush with the wall, it may extend wholly into the room or it may project for a part of its depth. The greatest freedom comes in the case of a fireplace built against an outer wall, with a stack for its sole use.

Where the fireplace is built against a partition, employing a stack with other flues, the question of pro-



Fireplace of the medieval type in the home of Mr. and Mrs. Brigham Britton, Geauga County, Ohio.



A mural painting makes excellent decoration for a fireplace. This effect of rural symbolism is by Artist William Sommer and adorns the farm home of Mr. and Mrs. Robert Bordner in Summit County, Ohio.

the origin of the term—a room where the family lives. The presence of a crane and a convenient kettle offers constant temptation to brew tea before the fire.

jection is complicated by disposition of spaces in adjoining rooms and a partial projection is the most frequent solution.

While the extreme simplicity of modern treatments tends toward the flush fireplace, much is to be said in favor of a degree of projection. It helps to emphasize the fireplace. It affords additional space at the wings for the placing of fuel containers, fire tools or furniture. In the case of the Heatsaver Fireplace, projection is distinctly preferable, since the grilles may be placed at the sides, rather than on the face.

Period Treatments—The modern movement in domestic design, which once represented merely an aversion to traditions, has reached a maturity that affords a fairly well digested technique.

Much agreeable designing of the present day is quite free from conscious period influence. In evaluating strictly modern design, it must be borne in mind that the fireplace is perhaps our most conservative institution. On grounds of strict utility, its use might be greatly curtailed. It persists and gains friends, because people see in it a satisfaction that has endured through the centuries.

Colonial Fireplaces—An offshoot of the Georgian period is found in Colonial and Early American modes. They had the advantage of being produced in a time and place in which simple technique and native materials ruled. The enduring vogue of Colonial architecture makes it quite appropriate that Colonial precedent be consulted in the fireplace design.

These precedents range from Classicism—often expressed in white enameled woodwork—to the ruder effects of fireplaces whose functions included cooking.

In somewhat refined rendering, such fireplaces lend great charm to the present-day living room and recall

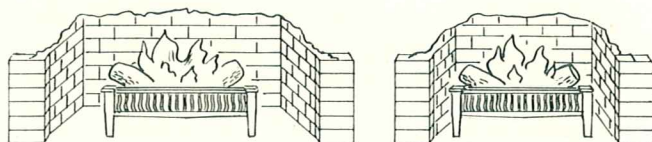
The Question of Size—Home planners often need to be warned against the sentimental desire for “a great big fireplace”. They forget that a great big fire would probably drive them out of the room. They need to be told that a small fire in a big fireplace is rarely satisfactory.

There is much greater heating efficiency, with much less nuisance, in a fireplace 30 inches wide, well filled with flame, than there is when the same fire is built in a 48-inch fireplace.



Mr. and Mrs. Phil Scott of Chesterland, Ohio, both amateur artists, created this fireside effect in a cottage deep in the woods.

Handicap of Too Large Fireplace



At left—fireplace too large for fire. Radiates less heat than where flame fits the fireplace snugly—as at right.

Heat radiated from a fireplace comes to a large extent from the heated brickwork that surrounds the flame. The closer the brickwork to the flame, the more it is heated. In the case of the 30-inch fireplace in the diagram above, the back and the sides are both heated. In the 48-inch fireplace, only a portion of the back masonry is heated. More heat undoubtedly goes up the chimney.

The larger fireplace involves a larger flue. In case of the 48-inch opening, the flue lining would have to be the 13" by 13" size, while the smaller, 30-inch fireplace would be adequately served by a 13" by 8½" flue. To maintain a steady draft, the larger flue would need 50 percent more air from some source. With a moderate size fire, it probably would not get such a volume of air. The up-draft would tend to be sluggish and, if ventilation were restricted, there would be a tendency to down-draft. Presuming a good draft were established in the larger flue, there would plainly be more cold air to heat.

So, plan no larger fire than your room requires and plan the fireplace to fit the fire snugly, if you want maximum warmth and freedom from trouble.

Air Supply for Combustion—It takes air to run a fireplace—air for draft, oxygen for combustion. In homes of past generations it was sometimes supplied over-abundantly. The roaring logs drew drafts through every chink and cranny of window or door. Chairs with wings at the level of the face were provided to keep off drafts from the rear, while the face and shins toasted.

Until recent times there has been little difficulty in securing moderate up-draft needed for the operation of the present-day fireplace. But newer techniques of weather stripping, caulking and use of special gaskets on casement windows has made many a modern interior tight as a drum. If a furnace or an incinerator is operating, the only source from which they can get needed combustion air is down the fireplace chimney. Down-draft thus created prevents maintaining a fire on the hearth. Even if there is no other fire in the interior, perfect tightness prevents the building of a satisfactory open fire.

The solution to all these problems, as well as the problem of decent respiration, is ventilated interiors. The slight opening of a basement window, if there is no other ventilating device, will generally provide air needed for the fireplace, for the furnace, the incinerator, the lungs.



Dunham Tavern, the oldest structure within the city of Cleveland, has this interesting kitchen fireplace. Now held as a public monument, Dunham Tavern is in charge of the Cleveland Society of Collectors.

SUCCESSFUL FIREPLACES

How to Measure Fireplace Achievement

By the Donley Observer

*All fireplace craft is solely meant
To yield a product of content.
I may admire a deft design
Or think the furnishings are fine.
A noble masonry expanse
May call for an approving glance
But no such graces can assure
The immemorial fireplace lure.*

*I shape my fireplace judgment from
The voice in which it tells me, "come";
How urgently the fireside chair
Insists upon my presence there.
The labored effort to arise
A sure criterion applies
That planning has not gone amiss.
So, since we are agreed in this
A further truth you will embrace—
That things inside the fireplace*



*Which aid its clean and generous blaze
Deserve the precedence of praise.*

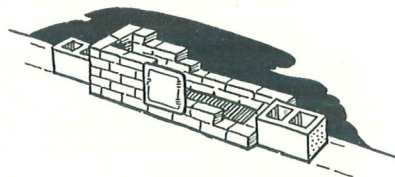
*It certainly is mighty fine
When colors, furnishings, design
With truest inner worth combine!
But dull, unhappy hours betide
When fireplace art is all outside.*

STORY OF A TYPICAL HOME FIREPLACE

AFTER considering the foregoing factors and having agreed on an attractive design, Mr. and Mrs. Owner entertain the hope that their fireplace will shed radiant warmth, with moderate fuel outlay; will be free from smoke eddies and look clean, very much like the picture shown here.

Begins with Ash-Pit—Watching it in their daily visits, they see the basement wall rise and in it the brick enclosure that is to be the ash-pit. Mr. Owner's pocket rule reveals interior dimensions of 40 by 16 inches—plenty, he thinks, for a fireplace that is to be 30 inches

Recess that forms the base of the ash-pit, incorporated in the foundation wall.

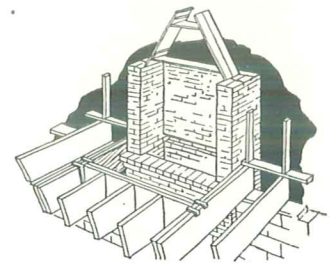


wide. Just above the prospective floor level of the basement, the mason introduces a 12 by 8-inch ash-pit door, big enough for a shovel.

Preparation for the Hearth—As the floor level is approached, the fore-wall of the pit widens forward in successive steps—"Corbelling", explains the proud Mr. Owner to his much-impressed wife. About 5 1/2 inches below the finished floor level, the fore-wall is leveled off, completed. At the same height, the mason introduces a notch in the rear wall, 3 1/4 inches high and one or more inches deep.

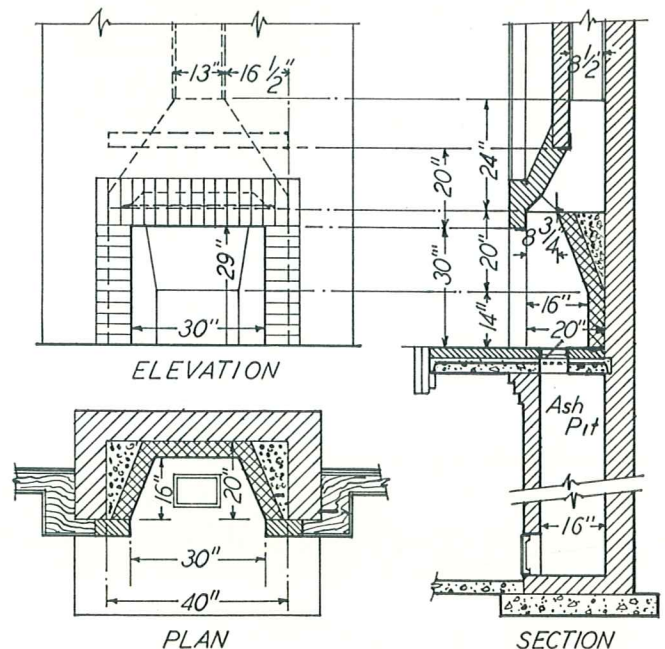
The Roughed-in Fireplace—Back wall and sides continue upward to a height some 32 inches above the hearth level. Here the mason introduces a wooden form, two sloping boards, like the side of a letter "A", held in place by cross strips—assuring true, smooth sides for the smoke chamber. Twenty-four inches above its base, the chamber has narrowed to flue dimensions. Wooden forms are removed. Mrs.

Owner remarks that this large, gaping recess "does not look much like a fireplace." "Just roughing it in," replies the mason.



Rough masonry completed to damper height with wooden form for smoke chamber in place.

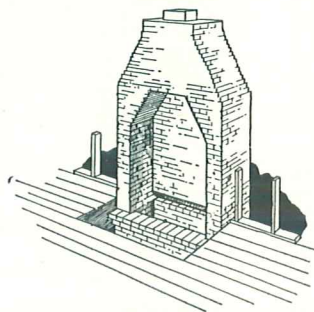
Building the Chimney—At the top of the smoke chamber, the mason introduces an 8 1/2 by 13-inch flue



lining. As work proceeds upward, each flue unit is encased in brick and carefully cemented to the adjoining unit. The finished height of the chimney is about 27 feet, three feet above the highest point of the roof. If the home has fireplaces on more than one floor, the flue arrangement is such as is shown on Page 17.

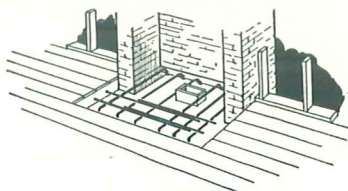
The Fireplace Expert—The master mason on this job likes to finish fireplaces himself, entrusting rough brick work to one of his crew. His first concern is the hearth slab to fill the gaping opening in the wooden floor.

Rough masonry carried to point where flue commences. All is ready for hearth construction.



A Cantilever Hearth—The hearth, he explains, must be free of floor support, since the settlement of chimney and floor will be unequal and might crack the hearth. Hence a 3½-inch slab is to be poured, its rear anchored in the notch of the rough brick masonry and its center resting on the fore-wall of the ash-pit. Its forward area is to be supported on the cantilever principle.

Form and reinforcing in place for pouring concrete hearth slab.

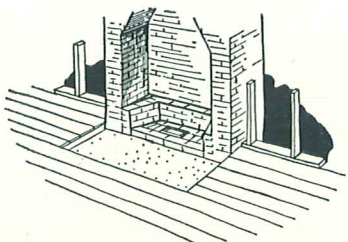


Six overlapping sheets of steel constitute the form. Six reinforcing rods, with ends bent to afford "feet" are placed and wired to lighter cross rods. This reinforcement stands at a height just under the level of the upper surface, when poured. A small, temporary, wooden frame outlines the opening for the ash dump that gives access to the ash-pit below. Metal forms and reinforcing rods constitute the Donley Cantilever Hearth Assembly.

The Interior Masonry—As the inner hearth of firebrick is laid and the back and sidewalls of the same material begin to take shape, Mrs. Owner remarks that it begins to look like a fireplace.

The uncrated damper lies, fully assembled, near at hand and the mason refers, from time to time, to the Donley Plan Sheet which came attached to the crate. The back of the fireplace is narrower than

Start of finished brick work of hearth and fireplace interior.



the front, Mrs. Owner notices, the sides being splayed inward about 5 inches to the foot. When the back has reached the height of 14 inches, a forward slope commences.

"It's just like a reflector," she remarks.

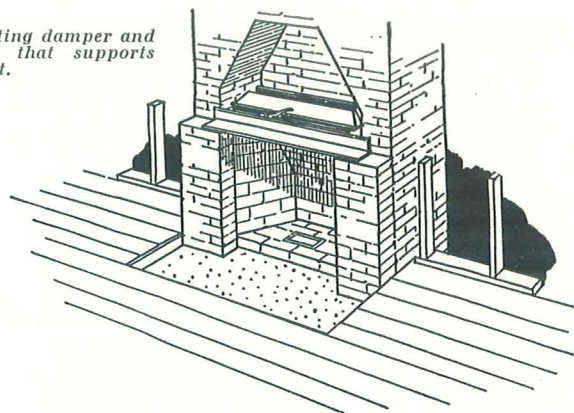
"Just the idea," the mason agrees.

Face brick of the front sides keeps pace with the firebrick interior. Twenty-nine inches above the hearth, the mason introduces a strong 3 by 3-inch angle to support the masonry of the upper front, or breast. "Seems as if I had read that the damper flange supports the brick work," remarks Mr. Owner.

"Not the Donley Damper and not the way I build fireplaces," replies the mason. "That would generally mean too low a damper position. You need a few inches of brick below the damper level as a 'hood'. Then suppose it was an arched opening. The flat flange would force the damper back and not leave room for a smoke shelf." Mrs. Owner wondered about "smoke shelf", but soon saw the mason level off the back and sides, at a height of about 32 inches—fill in over the slope with rubble and leave a real shelf.

Setting the Damper—Lifted into place, the damper just coincides with the slope of the back and angle of the walls, so that metal and masonry form a continuous surface. "See," explains the mason, "when down-draft

Setting damper and angle that supports breast.



comes down the chimney—as some is pretty sure to do—it strikes the smoke shelf. If it tries to get down into the fireplace throat, it strikes the valve plate of the damper, so it eddies upward and goes off with the smoke."

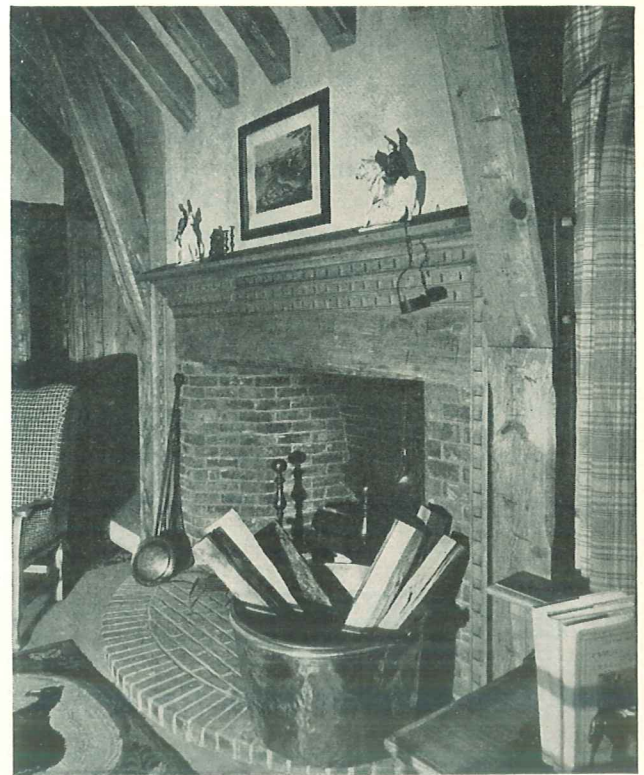
The sleeve for the control rod that opens and closes the damper is cemented in the front masonry. The length of the rod is adjusted by a set screw to bring the control key close to the brick front. Rubble fills in the angle between the breast and damper to make a smooth joint. From there on, it is a bricklaying job, until the masonry reaches mantel height.

"When the carpenters are putting in the trim, they will place the mantel," explains the mason.

"I can hardly wait," answers Mrs. Owner.



Fireplace in O. O. Bachtel residence, San Antonio, Texas. Bartlett Cocke, architect.



Studio fireplace in residence of E. H. Augustus, Waite Hill, Ohio. Monroe Walker Copper, architect.



Wendell Smith designed and built this fireplace for his studio living room at Topeka, Kan. Mr. Smith, in his capacity as journalist, has written much on fireplace topics and is founder of the Grand Order of Fireplace Fanatics. He also draws amusing cartoons on fireplace themes.

BUILDING

A SUCCESSFUL

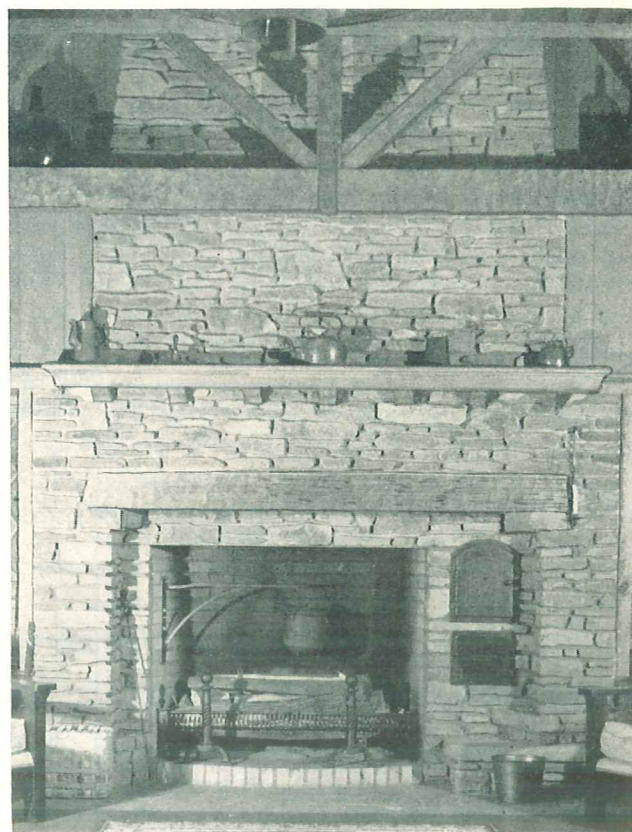
FIREPLACE

THE foregoing narrative gives a pretty good idea of how one fireplace was built, but not all fireplace construction questions are encountered in any single fireplace operation. With the aid of the plans, adjoining, let us review some of these problems.

Plans are Furnished—Difficulty is avoided by sticking quite closely to the plan, elevation and profile shown. This is a convenient solution since a sheet with similar plans, directions and construction hints is attached to the crate of every Donley Damper. We do not claim, by any means, that it is impossible to build a successful fireplace from other plans. However, the design here offered represents a consensus backed by long experience. It permits a wide range of adaptation to exterior design. We see no reason to seek variation in interior proportions affecting the actual conditions of combustion.

Two Methods of Building—The generally accepted practice, and the one which we recommend, is to complete the rough brick work of the fireplace from ash-pit footings to chimney top before undertaking the installation of the finished interior and front. There is also a practice of finishing the fireplace in sequence as the brick work advances. We believe that the completion of a fireplace is a task of sufficient importance to command attention apart from the general progress of rough brick work—which may be entrusted to a man of lesser skill. The second method mentioned may exclude the service of fireplace specialists—whether engaged in the mantel and tile trade or in general masonry—whose concentrated experience is a powerful factor for better fireplaces.

The Ash-Pit—Where the building has a basement and the ash-pit is integral with the foundation, enlarged footings may be necessary to avoid unequal settling—the result of concentrated weight of a heavy chimney. If the ash-pit is separate from the foundation, the same problem of unequal settlement must be considered. In buildings without basements, care must be taken to have the footings well below frost level as well as



Fireplace with Dutch Oven in home of Howard Keil, Lake Lucerne, Ohio. Architect W. Norman Jeavons. Contractor Matt Wilson.

adequate to carry the load of the chimney. Access for removal of ashes, in such cases, will be at the exterior ground level, where the Ash-pit Door will be installed. Choice of a door, for either outside or inside location, should be governed by convenient shovel size, which means 12 by 8 inches or larger, as illustrated at the end of this chapter.

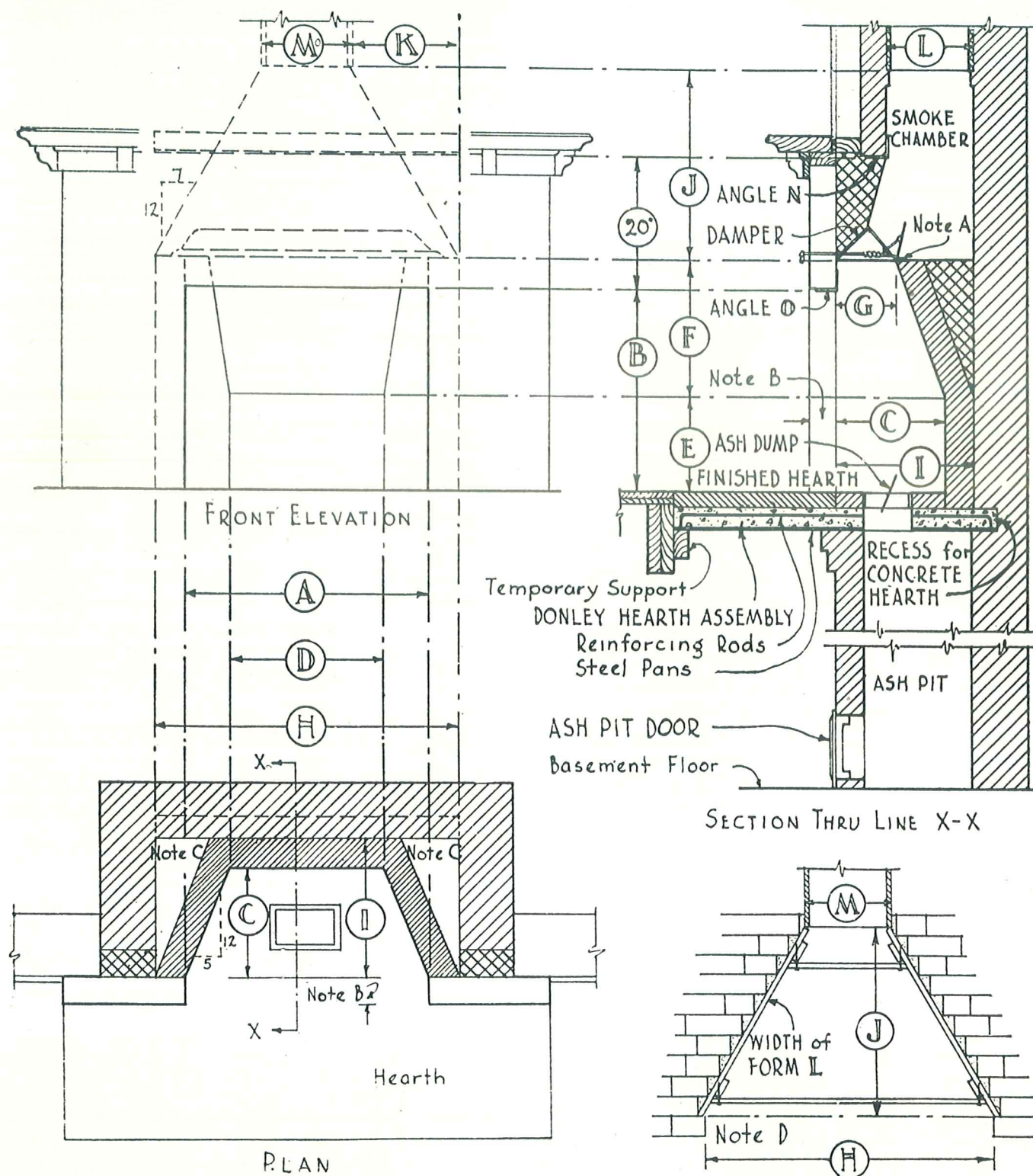
Hearth Construction—It is important that the hearth, including the fore-hearth outside the fireplace area, be wholly supported by the chimney. Compromise support, in which the floor is made to carry part of the load, entails risk of cracking the hearth, should floor and masonry settle unevenly—or in case of shrinking or warping of floor timbers.

The cantilever principle must be employed in a properly supported hearth and this means a hearth slab of adequate strength. The design calls for a reinforced slab, 3½ inches thick. In helping to make better hearth slab construction convenient to the fireplace builder, the Donley Brothers Co. has developed an assembly of corrugated metal forms and of reinforcing rods, which save time and lend certainty to the operation. Six corrugated metal pans, by overlapping, serve for almost the whole range of hearth sizes.

SUCCESSFUL FIREPLACES

Construction Sketch of Successful Fireplace

See Table of Dimensions on Opposite Page



Notes on Construction Sketch and Dimension Table

Note A—The back flange of the damper must be protected from intense heat by being fully supported by the masonry. At the same time, the damper should not be built in solidly at the ends but given freedom to expand with heat as shown in the front elevation on the opposite page.

Note B—The drawing indicates the thickness of the brick fireplace front as four inches. However, no definite dimension can be given for this because of the various materials used—marble, stone, tile, etc., all having varying thicknesses.

Note C—The hollow, triangular spaces indicated in the plan, behind the splayed sides of the inner brick work should be filled to afford solid backing. If desired to locate a flue in either space, the outside

dimensions of the rough brick work should be increased.

Note D—A good way to build a smoke chamber is to erect a wooden form consisting of two sloping boards at the sides, held apart by spreaders at the top and bottom. Spreaders are nailed upward into cleats as shown. The letters H, M, and J correspond to letters in the elevation and in the Table of Dimensions. The form boards should have the same width as the flue lining.

Note E—A steel smoke chamber is made by the Donley Brothers Co. and furnished where desired.

Note F—The sectional view opposite shows a rotary control type of Donley Damper. On Page 16 both rotary control and poker control types of damper are illustrated.

TABLE OF FIREPLACE DIMENSIONS

FINISHED FIREPLACE OPENING							ROUGH BRICK WORK AND FLUE SIZE								EQUIPMENT							FURNISHINGS			
A	B	C	D	E	F	G	H	I	J	OLD FLUE SIZES			NEW FLUE SIZES			ROUND	HEARTH ASSEMBLYS	DAMPER ROTARY	DAMPER POKER	ASH DUMP	ASH PIT DOOR	STEEL ANGLES* N O		FIRE BASKET	SCREENS GLASS
24	24	16	11	14	15	8¾	32	20	16	11¾	8½x8½	10	8x12	8	72	324	224	58	12x8	A-36	A-36	24			
26	24	16	13	14	15	8¾	34	20	19	12¾	8½x8½	11	8x12	8	72	330	230	58	12x8	A-36	A-36	24	No. 10		
28	24	16	15	14	15	8¾	36	20	21	11½	8½x13	12	8x12	10	72	330	230	58	12x8	A-36	A-36	24	10		
30	29	16	17	14	18	8¾	40	20	24	13½	8½x13	14	12x12	10	72 OR 84	330	230	58	12x8	A-42	A-36	28	20		
32	29	16	19	14	21	8¾	40	20	24	13½	8½x13	14	12x12	10	72 OR 84	333	233	58	12x8	A-42	A-42	28	30		
36	29	16	23	14	21	8¾	46	20	29	16½	13x13	17	12x12	12	72 OR 84	336	236	70	12x8	A-48	A-42	30	40		
40	29	16	27	14	21	8¾	48	20	26	17½	13x13	16	12x16	12	72 OR 84	342	242	70	12x8	A-48	A-48	34	50		
42	32	16	29	14	23	8¾	48	20	27	17½	13x13	16	16x16	12	72 OR 84	342	242	70	12x8	A-48	A-48	34	50		
48	32	18	33	14	23	8¾	56	22	35	21½	13x13	20	16x16	15	96	348	248	70	12x8	B-60	B-54	40	60		
54	37	20	37	16	27	13	60	24	37	21	13x18	22	16x16	15	96		254	70	12x8	B-60	B-60	40	SPL.		
60	37	22	42	16	27	13	72	27	45	27	13x18	26	16x20	15	96		260	70	12x8	B-72	B-66	†	"		
60	40	22	42	16	29	13	72	27	46	27	18x18	26	16x20	18	96		260	70	12x8	B-72	B-66	†	"		
72	40	22	54	16	29	13	84	27	56	33	18x18	32	20x20	18	SPECIAL		272	70	12x8	C-84	B-84	†	"		

*ANGLE SIZES A—3 x 3 x ¾ B—4 x 3 x ¼ C—5 x 3½ x ⅝ †20" LOG RESTS

Note 1—A ruler is a convenience in using this table. Select the number in the left-hand column that corresponds to your proposed width of fireplace opening. Lay the ruler on the line below it and read the figures to the right on the same line. They give you the complete recommended dimensions and installation for the fireplace of the chosen width of opening.

Note 2—Under the heading Accessories, the first two columns refer to two different types of damper and are, of course, alternates. Rotary control dampers have numbers beginning with 3, poker beginning with figure 2. An order that simply calls for a given size in inches is not sufficiently clear. Order dampers by number.

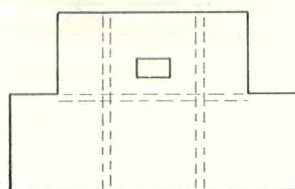
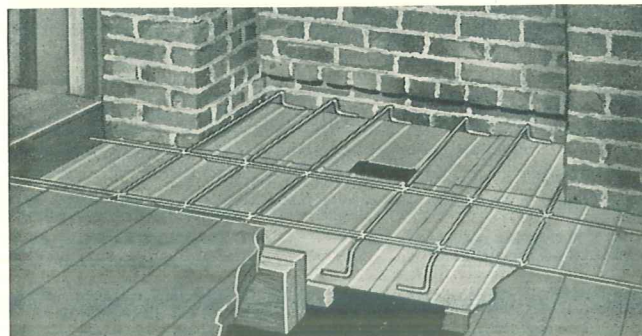
Note 3—Under Furnishings, the size of fire basket is specified, since it is important to have a basket that fits the hearth plan. Consider also the advantage of a glass screen described on Pages 47 and 63.

Note 4—Two sets of flue lining dimensions appear in the table above, one for the old standard sizes and another for the nominal sizes of those conforming to the new, modular standard. Round sizes are also shown. Capacity as indicated by sectional area is presented on Page 14. By "nominal" size is meant actual size plus half an inch for each dimension as joint space. The modular movement, as promoted by the American Standards Association, seeks to reduce all sizes of installed materials to multiples or derivatives of a "modular", which is four inches.

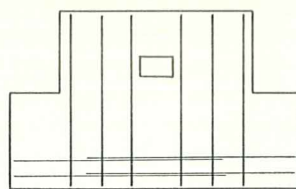
SUCCESSFUL FIREPLACES

Building a Successful Fireplace, Continued

Cantilever Hearth Construction—Below are seen arrangement of pans and also of the reinforcing bars. These are bent at each end to give them the correct elevation, also "feet" on which they remain upright during the pouring operation. Since the axis of strain is on the fore-wall of the ash-pit, the reinforcing is provided just below the upper surface of the slab. The dimension table is a guide in securing the desired assembly.

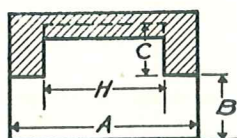


Layout of Pans



Reinforcement Bars

Note—Hatched portion indicates brick work. Unhatched portion is concrete slab.



No.	A	B	H	C
72	72"	24"	48"	24"
84	84"	24"	48"	24"
96	96"	24"	72"	24"

The rear of the slab is anchored in a recess in the rear wall. The corbelled fore-wall of the ash-pit forms an axis, while the front of the form rests on a temporary strip of wood, nailed to the floor joist header. The slab will, of course, be constructed at a level which permits the finishing hearth of brick, tile or other material to be laid at floor level, or whatever height is desired.

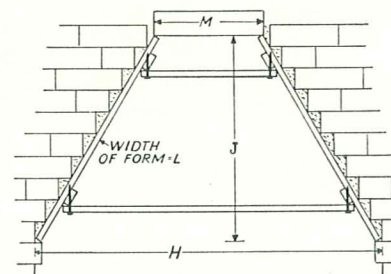
Roughened-in Fireplace—The plans and table of dimensions indicate the relation in size between the rough enclosure and the finished fireplace.

Smoke Chamber—At damper level, the enclosure narrows to form the smoke chamber. It is important that the slope of its two sides be identical, the flue taking

off from the center.

Necessary sloping to bring the flue to its place in the stack is accomplished in the flue, not in the smoke chamber. A form consisting of two boards with connecting braces

helps to give the brick a proper slope and assists in providing the important smooth surface which assists in discharge of smoke.



Flue Construction—Important considerations in proper building of a flue are (1) sufficient size, the net flue area being not less than $\frac{1}{12}$ the area of the fireplace opening, (2) sufficient height, 25 feet is desirable with projection of not less than 3 feet above the highest point of the roof, (3) smooth unobstructed passage for products of combustion, and (4) slope, if any, not to exceed 7 inches to the foot.

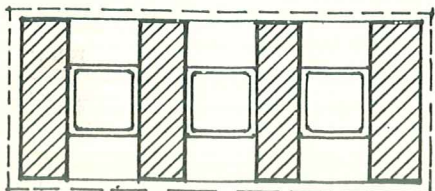
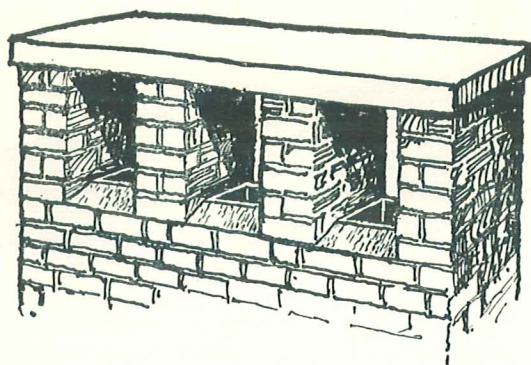
Capacity of Flue Linings

The custom of using flue linings has become almost universal, due to the recommendation of the National Fire Underwriters and building code requirements. Flue lining sizes, shown in the table below, are also printed in the Table of Fireplace Dimensions on the preceding page. Inside sectional figures represent area in square inches.

—OLD STANDARD—		MODULAR —STANDARD—		ROUND —LININGS—	
Outside Dimensions	Inside Section	Nominal Outside Dimensions	Inside Section	Inside Diameter	Inside Section
4½ x 8	23.56	4x 8	15		
		4x12	20	6"	28.27
		4x16	27		
7½ x 7½	39.06	8x 8	35		
8½ x 8½	52.56	8x12	57	8"	50.26
		8x16	74		
8½ x13	80.5			10"	78.54
		12x12	87		
8½ x18	109.69	12x16	120	12"	113
13 x13	126.56	16x16	162	15"	176.7
13 x18	182.84	16x20	208		
18 x18	248.06	20x20	262	18"	254.4
		20x24	320	20"	314.1
		24x24	385	22"	380.13
				24"	452.3

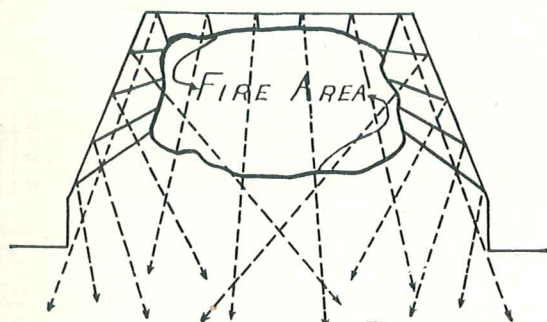
It will be noted that three different methods of measurement are employed for the three types of flue lining—outside measurement for the old standard, "nominal" outside dimensions for the modular standard and inside diameter for the round linings. Whatever type of lining is used, the sectional areas provide a guide for the desired flue capacity, which should be based on a sectional area not less than one twelfth that of the fireplace opening.

Flue linings should be tightly cemented together. This is especially important where more than one flue

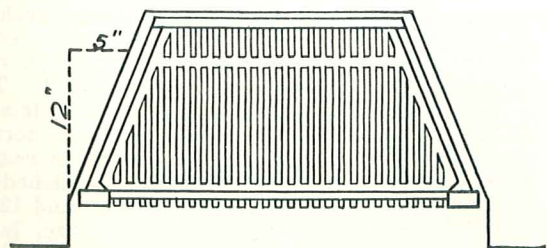


occupies a single stack. Otherwise there may be suction of smoke down one flue while smoke ascends in the other. A minimum of four inches of masonry between parallel flues is likewise recommended. Unequal projection of flues above the stack is a safeguard against smoke pouring out of one flue and down the other. Proximity of a tree or high building may be a hazard to free discharge of smoke. Often the remedy is found in hooding as shown in the diagram above.

Interior Construction—A successful fireplace is one in which the fire burns brightly with a maximum of warmth and freedom from discharge of smoke into the



Illustrating forward deflection of heat, when sides are splayed as indicated.



Showing how Donley Fire Basket fits into fireplace whose walls are properly splayed.

room. Every feature of the plans and discussions offered here contribute to this result.

The Hearth Plan—Count Rumford, whose work as a fireplace designer has never been surpassed, conceived the fireplace interior as a sort of reflector. His first measure was to splay the sides and thus narrow the hearth from front to back. Donley plans call for a splay of 5 inches per foot.

Back is Sloped—The reflector concept is further carried out by sloping the back of the fireplace forward from a point 14 inches above the hearth to the level of the damper as indicated in the drawings. This deflects both flame and heat forward. Products of combustion pass off through the damper, but a maximum of heat is deflected into the room.

Damper Placed Forward—The sloped back contributes to other important design factors. It brings the damper forward of and not directly under the flue and to a position just back of the breast wall of the fireplace. It leaves room for an ample smoke shelf behind the damper. Where the damper has a rear position no smoke shelf is possible. Soot falling down the chimney comes through the damper opening and often into the room. There is no barrier to down-draft and smokiness ensues. The rear position sacrifices much heat. Sloping back, damper well forward and a roomy smoke shelf—all important—all three co-ordinated in Donley designs. None can be sacrificed without impairing the other. The smoke shelf, with the upturned damper plate forming a wall at its front, forms a barrier to down-draft which is trapped and eddies upward in the ascending column of smoke.

The recommended vertical position of the damper is four to eight inches above the breast wall of the fireplace (which is supported by a stiff steel angle). To sacrifice this breast wall margin in order to support the masonry by a damper flange is to incur risk of issuance of smoke into the room.

Choice of a Damper—The damper must be a co-ordinated part of a properly designed fireplace interior. It must afford a smooth, metal throat for the passage of smoke and fumes. It must have a vertical front flange to permit it to rest snugly against the masonry of the fore-wall. Its opening must be narrow, from front to rear, to continue the plane of the back slope and leave room for the smoke shelf. It must have a valve plate that is removable and that operates for the full width of the fireplace and forms an effective front barrier along the smoke shelf. Its sides must be splayed to conform with the fireplace design. It must be easy to adjust, easy to close during seasons when the fireplace is not in use. The Donley Damper was designed with all these objects in view. Choice of the means of control is a matter of preference. Poker control is less conspicuous. Rotary control is simpler to operate.

EQUIPMENT FOR SUCCESSFUL FIREPLACES

The Donley Fireplace Damper

Type illustrated is Rotary Control
There is also a Poker Control Type

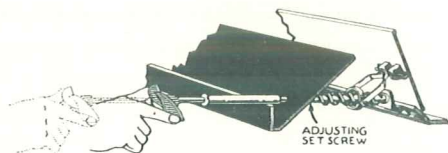
Prime aid to a successful masonry fireplace is the Donley Damper, designed to conform to correct interior construction of the fireplace; built to last as long as the home; easy to operate. It promotes clean discharge of smoke through its throat, while maximum heat is delivered into the room.

Narrow Throat—The smooth, metal throat is kept at minimum width to afford room at the rear of the damper for an ample smoke shelf and to permit the sloping of the masonry at the back in such a way as to throw the ascending heat forward into the room.

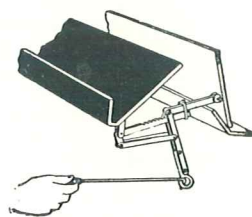
Narrow Front Flange—The important forward position of the damper opening is further aided by a vertical iron flange which brings it close behind the breast masonry and renders its position independent of the support of that masonry, which is accomplished by use of a strong steel angle.

Construction—Of highest grade cast iron. The four sizes marked § in the table are made of rust resisting Cor-Ten steel plates 12 gauge to ¼" thickness solidly welded. Dimensions are the same as for cast iron.

Choice of Operating Device



Above is shown how the valve plate of damper is operated by rotating knob at front of fireplace and also adjustable feature for different thicknesses of masonry facing. Below is illustrated the "out of sight" control. Damper is opened by pulling forward on ring with poker, closed by lifting slightly and pushing back. The lifting motion releases the engagement.

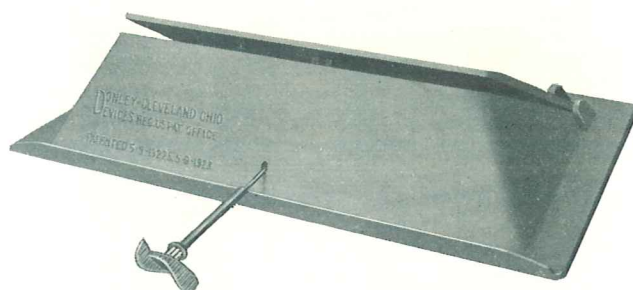


Guide to Size and Type of Damper

Type of Damper and Number of Each			For Fireplace Openings With Maximum Width of	Shipping Weight
Poker	Rotary	Chain		
224	324	...	24"	27 ½ lbs.
\$230	330	430	30"	32 "
\$233	333	...	33"	35 "
\$236	336	436	36"	38 "
\$242	342	442	42"	44 "
248	348	...	48"	50 "
254	354	...	54"	95 "
260	360	...	60"	100 "
272	372	...	72"	129 "
*284	*384	...	84"	150 "
*296	*396	...	96"	170 "

*Two Valve Plates.

§Steel or Cast Iron.



Guide Below to
Damper Dimensions

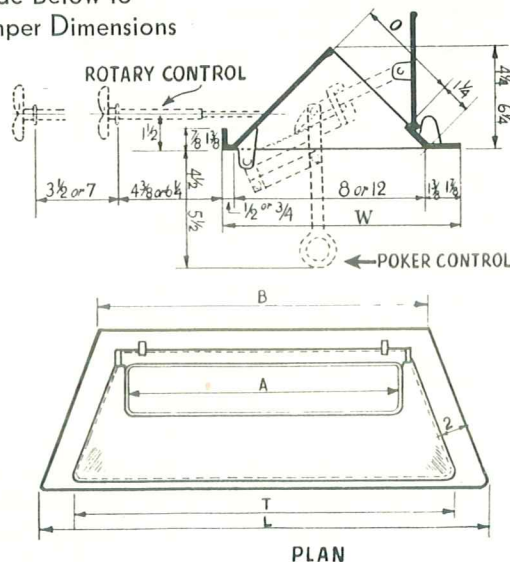


Diagram and table help to calculate space required for each damper. Where two dimensions are indicated on same line, the larger is for dampers in sizes over those of Nos. 248 and 348 (more than 48 in. wide).

Both operating devices are shown.

Poker Control No.	Rotary Control No.	Throat			Overall		
		Bot. T	Top A	Opng. O	Lgth. L	Back B	Width W
224	324	24	17 ½	4 ½	28 ½	21	9 ¾
230	330	30	23 ½	4 ½	34 ½	27	9 ¾
233	333	33	26 ½	4 ½	37 ½	30	9 ¾
236	336	36	29 ½	4 ½	40 ½	33	9 ¾
242	342	42	35 ½	4 ½	46 ½	39	9 ¾
248	348	48	41 ½	4 ½	52 ½	45	9 ¾
254	354	54	47 ½	7	58 ½	46	14 ¾
260	360	60	49 ½	7	64 ½	53	14 ¾
272	372	72	60 ½	7	76 ½	64	14 ¾
*284	*384	*84	73 ½	7	88 ½	77	14 ¾
*296	*396	*96	85 ½	7	100 ½	89	14 ¾

*Two Valve Plates.

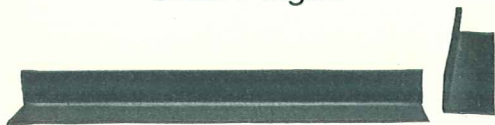
Clean-Out or Ash-Pit Door



Fabricated from
Cor-Ten Steel

This excellent Donley Clean-out Door has a frame welded from heavy steel angles and a door made from a ½-inch rust resisting Cor-Ten steel. The frame is 2" deep to provide support for brick work and secure anchorage which is increased by perforations. Furnished in sizes 8" x 8", 12" x 8" and 12" x 12". The 12" x 8" size, large enough to admit a shovel, is recommended as an ash-pit door.

Steel Angles

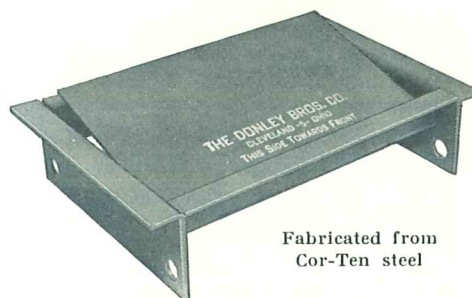


A practical necessity in the proper support of masonry over the fireplace opening. These angles are of tested supporting strength and cut to convenient sizes. Free masonry support from consideration of damper height.

Sizes	Lengths, Inches	Shipping Wt., Per Ft.
3x2 x $\frac{3}{8}$	*30-36-42-48-54	3.07 lbs.
3x3 x $\frac{3}{8}$	*30-36-42-48-54	3.71 "
4x3 x $\frac{3}{4}$	*30-36-42-48-54-60-78	5.8 "
4x4 x $\frac{3}{4}$	Cut to order.	6.6 "
5x3 $\frac{1}{2}$ x $\frac{3}{8}$	" " "	8.7 "
6x4 x $\frac{3}{8}$	" " "	12.3 "

*Other lengths can be furnished, cut to order.

Ash-Dump

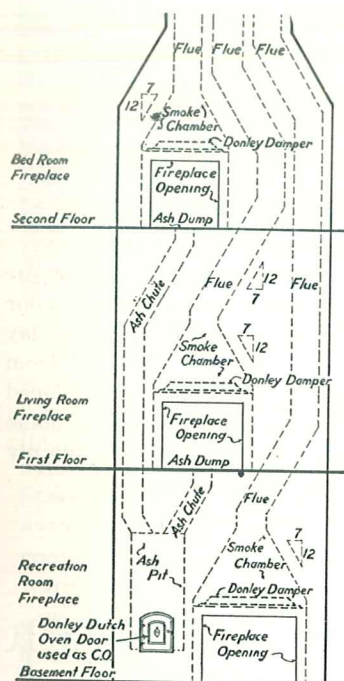


Fabricated from
Cor-Ten steel

This high quality steel Ash Dump is constructed with a deep flange, perforated for secure anchorage in the hearth masonry, where expansion and contraction make such anchorage necessary. The valve plate is securely pivoted and cannot drop out, down the ash-pit. Size illustrated, No. 58, has a hearth opening of 8" by 5". There is also a 10" by 7" Ash Dump of cast iron, No. 70.

Combinations of Adjacent Fireplaces

Fireplaces on Two or Three Floors



THE day is past when the fireplace problem can be considered as confined to the building of a single, living room fireplace. Most modern homes have basement recreation rooms, in which a fireplace is an indispensable feature. Often the same stack is employed which serves the living room fireplace, but many errors are made, such as venting of both fireplaces through a single flue, or the needless sacrifice of an ash-pit for the fireplace above.

A fireplace in a master bedroom, nursery, library or informal sitting room that may be located on the second floor makes fireplace planning a three-story problem. So we present

the sketch here shown that indicates an ideal way to combine three fireplaces in a single stack.

Each fireplace has a separate flue. Flues take off properly from the center of the smoke chamber. The slope of the flue is in no case such as to impede successful operation.

A joint ash-pit is provided for the fireplaces on the two upper floors. Instead of a typical clean-out door, a Donley Dutch Oven Door is employed, which gives the basement fireplace the aspect of a Dutch Oven Fireplace. With care, the occasional task of removing ashes through the basement recreation room need cause no offense.

Fireplaces on Opposite Sides of Wall

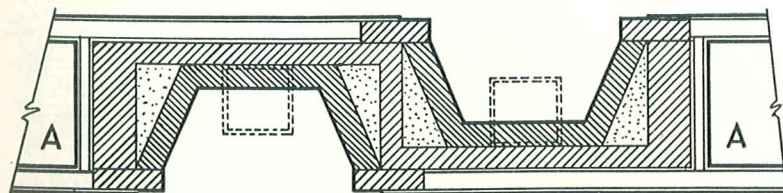
THE problem of fireplaces on the opposite sides of the same wall is quite often that of indoor and outdoor fireplaces on two sides of an exterior wall, but the sketch at the bottom of this page refers to fireplaces on both sides of an interior partition.

Avoiding the deep projection that goes with back-to-back position, this arrangement for an optional disposal

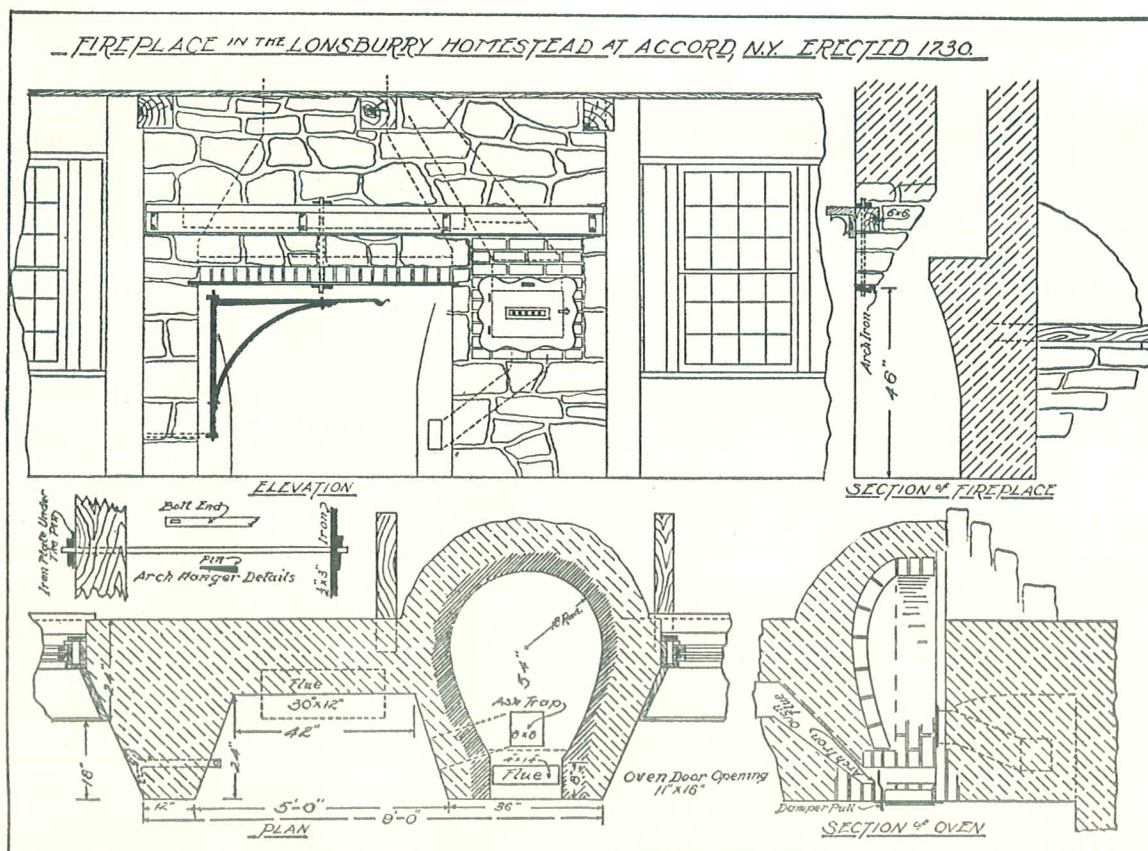
of the spaces marked A and A permits projection to be apportioned, reciprocally, between the two rooms. A relatively plain panel must adjoin each fireplace, representing the back of the opposite fireplace. However, the mantel can be extended across this panel with good effect.

The A and A spaces may have fuel containers at their bases and above be devoted to book shelves, space for art objects or be finished as cupboards. Fuel space may be continuous through the wall and thus serve both fireplaces by filling from one side only.

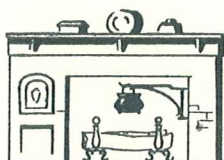
Smoke chambers will be formed symmetrically and the slope of flues will start at or above the top of chamber.



SUCCESSFUL FIREPLACES



THE DUTCH OVEN FIREPLACE



THERE is much confusion in the use of the term Dutch Oven. Dictionaries define it as a metal chamber for baking, placed on the hearth. Such metal ovens survive in portions of the American west. The oven which

Count Rumford patented and which sold extensively in the early part of the Nineteenth Century was of this type.

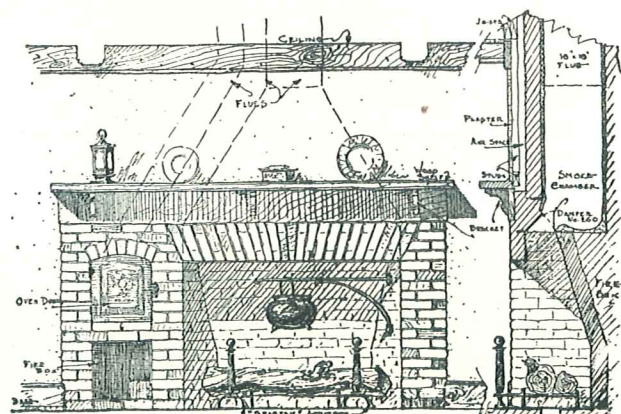
But a more common meaning, in traditions that now survive, is a masonry oven adjoining a fireplace. Probably early English settlers in America found Dutch and German immigrants using an unfamiliar type of oven and gave it that name. In all countries of Europe, baking was pursued in masonry ovens for many centuries. In many cases, the oven was outdoors and operated independently of the fireplace. In rural England it was not uncommon to have such ovens and, likewise, to have a smaller oven adjoining the kitchen fireplace. The former was known simply as "the oven". The latter as "the kitchen oven".



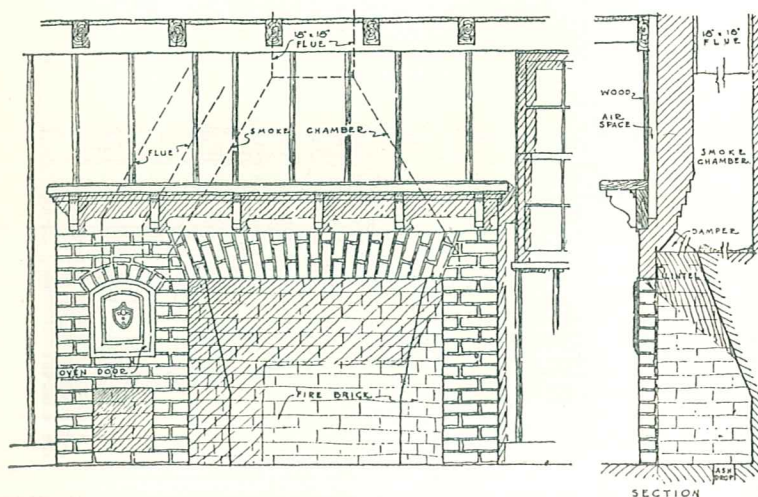
Some people call this a Dutch Oven.

Operation consisted of introducing fire into the oven

until it was thoroughly heated and then cleaning the interior. Bread dough was placed on the heated floor of the oven. The convenience of a kitchen oven lay in the fact that embers could be readily shoveled from the hearth of the fireplace into the oven and replaced there when their mission was accomplished. Some form of venting, usually into the main flue, was plainly necessary.



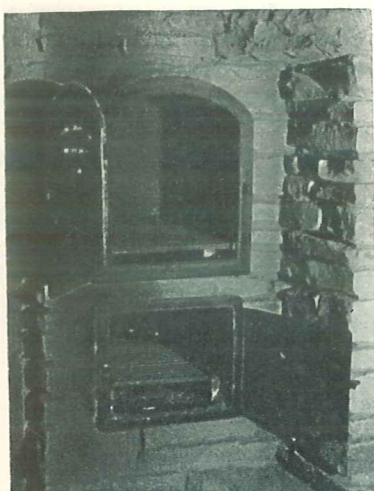
MODERN CONSTRUCTION APPLIED TO EARLY AMERICAN MANTEL - FACE FLUSH



Design at left offers practical suggestions for Dutch Oven Fireplace, the oven being vented into a separate flue, rather than the main fireplace flue.

"The oven extends outside the main walls of the house," he writes, "and there were at one time on the outside walls (and at either side of the projection) oak beams as shown in the drawing. One of them is still in place and the other is now gone. They were probably used to support a roof over the oven. The stone work was laid up in clay. The brick were made from local clay and laid in lime mortar."

He tells us that stone work in the room was laid in clay and that a lime skim was applied over the face of the fireplace.



Double type of Dutch Oven with fire chamber below.

The Dutch Oven Today—While this form of baking is rarely practiced, the oven adjoining a fireplace has renewed favor. Its presence at the side of the fireplace gives an authentic touch of quaintness to reproductions of authentic Early American fireplaces. Often its presence is largely ornamental, the recess being used for

storage. However, an increasing number of fireplace builders are including actual cooking ovens, both in indoor and outdoor fireplaces. There is a commendable freedom in the means of heating these ovens. Sometimes metal is used to separate the fire from the oven. If the fire is below, the oven may be used for cooking; if it is at the side, the oven is used for warming.

In other instances, a charcoal fire burns during the cooking operation. For such purposes, it is common to introduce a small fire door below the oven door. Instead of a masonry floor, the actual oven has a grid on which cooking or baking utensils are placed. Venting is usually through a small flue communicating with the fireplace flue.

An Early Model—On the preceding page is shown a drawing of the fireplace and oven in the Lonsbury homestead at Accord, N. Y. Lawrence S. Kier, mason of Cragmoor, N. Y., who repaired it, calls attention to the iron arch support, suspended by one iron rod anchored in a beam. The capacity of the oval oven is an arresting factor.

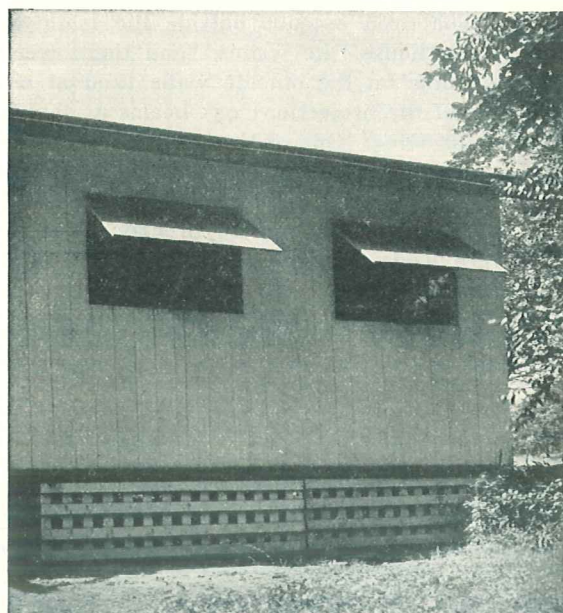


Constructing a modern Dutch Oven with heat chamber below on estate of W. D. Callaghan, at Gales Mills, Ohio. John Sherwood Kelly, architect. Fireplace is Heatsaver. Details of this type of oven on Page 72.

Donley Dutch Oven Door—The Donley Brothers Co. offers aid in Dutch Oven construction in the form of a Dutch Oven Door, pictured here. The design is pleasing either in period or modern setting. Located beside a basement fireplace, it often serves as an ash-pit door for fireplaces on floors above, as illustrated on Page 17. Its overall size is 15 by 18 inches and it fits a wall opening $12\frac{1}{2}$ by $15\frac{1}{2}$ inches in size.

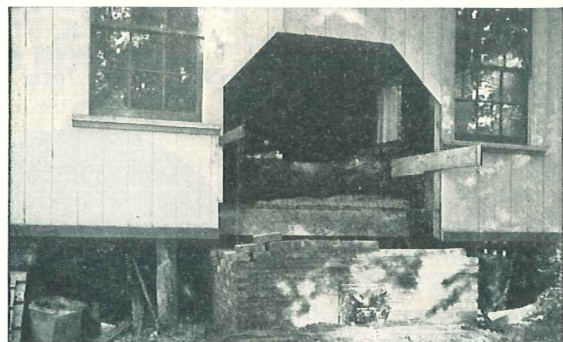


NOTES ON AN AMATEUR'S FIREPLACE

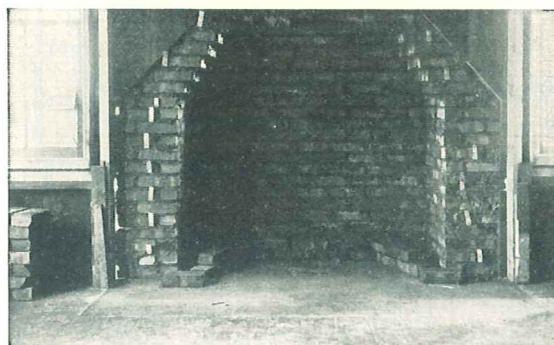


THIS simple, frame cottage needed a fireplace to provide comfort on the chilly evenings that come in any summer season. The owner was not a mason, but he decided to do something about it.

The first steps were to provide openings in the wall and floor. The wall opening called for a rearrangement of the windows. The floor was sawed back two feet and to the full width of the rough brick work. This meant rearranging the supports for the joist. Also it was necessary to excavate down below frost level to provide footings for the chimney.



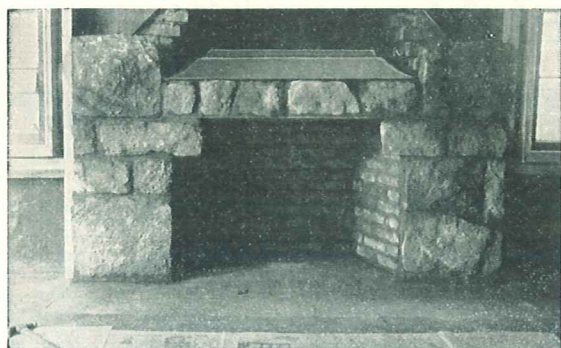
This picture shows the masonry constructed up to floor level. It rests on footings below the frost and covers more area than a professional would use, generally, for the same size fireplace. The front wall extends beneath the hearth and supports it. A reason for this was to give more width to the ash-pit. Ashes must be withdrawn at ground level and lack of depth is made up by larger area. The hearth is a concrete slab poured on a wooden form. It has an opening for an ash dump.



Here is an inside view showing the next ensuing stage, the rough brick work. Rough masonry encloses the finished interior. It is often made of common brick. In this case, the entire job was done with shale brick with no ill effects from ensuing heat. The brick work is calculated for a projection of the finished fireplace into the room of about six inches. This includes the stone face, not shown in this view.



Now we go outside and see how things are progressing. Pretty fine, if this picture means anything. The broad chimney structure narrows to conform to the slope of the smoke chamber. From this point up it will be built around a flue lining of the dimension of 13" by 13". At the bottom is the ash-pit door through which it will take a pretty long handled shovel to reach all the corners of the wide ash-pit.



Here the finished interior and face masonry has been erected to damper height and the damper placed upon it. The stone work above the opening is supported by a heavy angle. The brick work at the rear is splayed forward from a height 14 inches above the hearth and at a slope that brings it just under the rear flange of the damper. Space back of this slope is filled and leveled off to form a smoke shelf. There remains the closing in of the breast above the damper, with a smooth slope back to the base of the flue.

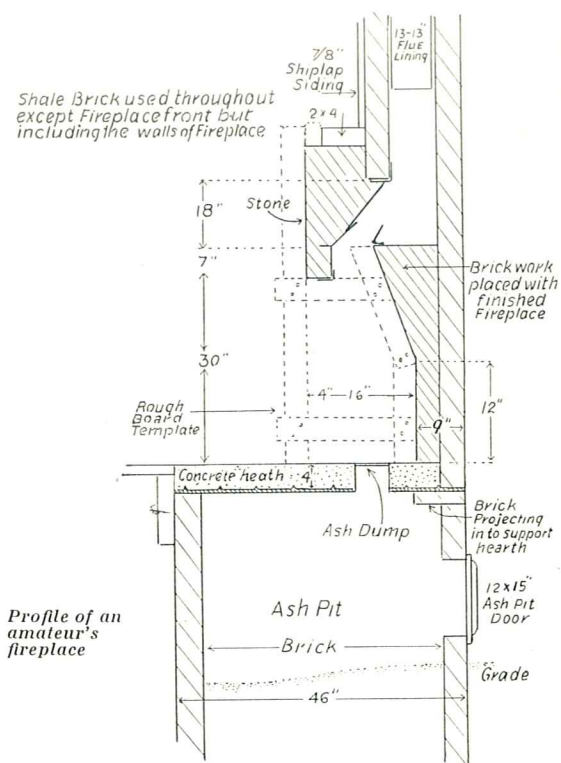


Here is the finished fireplace that has brought comfort and delight to a previously rather bare interior. It is doubly satisfying to the owner, because it is his own handicraft—the product of many hours planning and working; not too arduously so as to destroy the pleasure of creation. The stone for the front is quarried from a hillside on the premises. Single unit corbelling at the corners gives a deft and original touch. There will be no shivering on chilly evenings so long as the wood pile holds out.



Now we see an outside view of the finished chimney. Since the cottage is low and there are tall trees in the near vicinity, it was deemed best to cap the flue with a slab of concrete, supported at the four corners. Eddying gales cannot blow directly down such a chimney. Water does not enter, hence no frost damage in winter, when cottage is unoccupied.

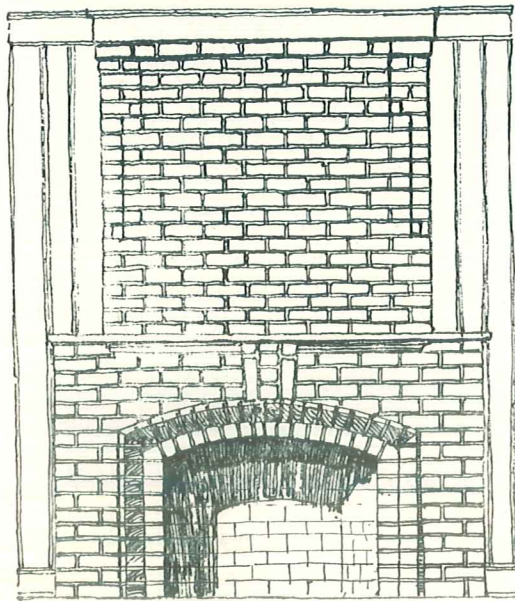
SUCCESSFUL FIREPLACES



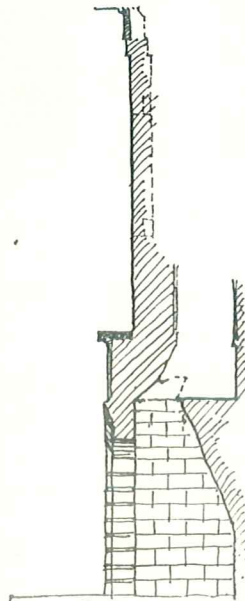
Sometimes the best plans are those drawn after the job is finished and here is a profile drawing that will help any other aspiring amateur mason to tackle his own fireplace problem. It is not likely that conditions on any two such jobs will be the same, so the studious reader will still have a chance to be original.

PORTFOLIO OF FIREPLACE DESIGNS

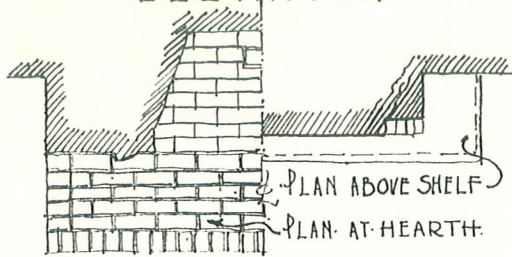
Suggestions for Exterior Masonry Treatment



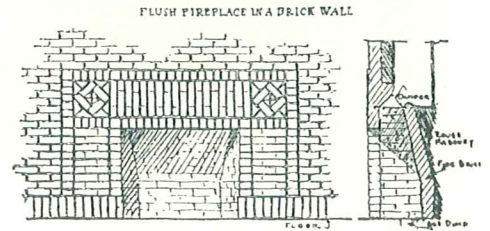
ELEVATION.



SECTION.

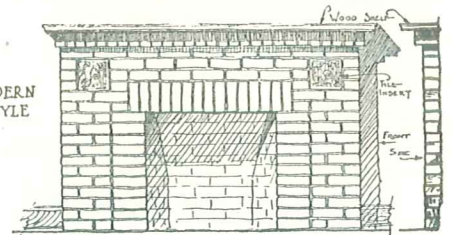


MASONRY CARRIED TO CEILING

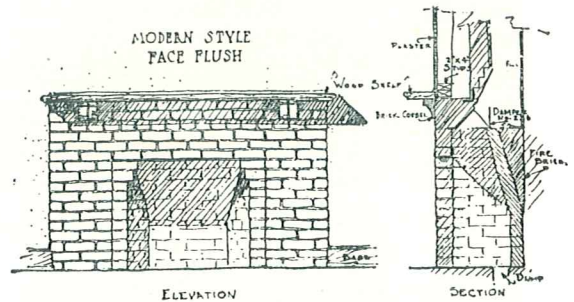


FLUSH FIREPLACE IN A BRICK WALL

MODERN
STYLE

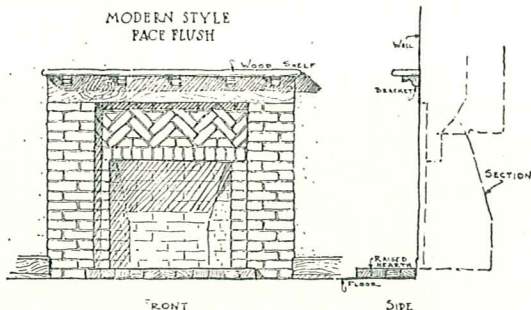


MODERN STYLE
FACE FLUSH



ELEVATION

SECTION

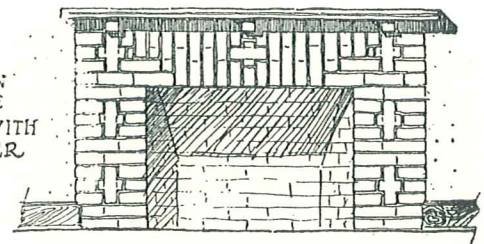


MODERN STYLE
FACE FLUSH

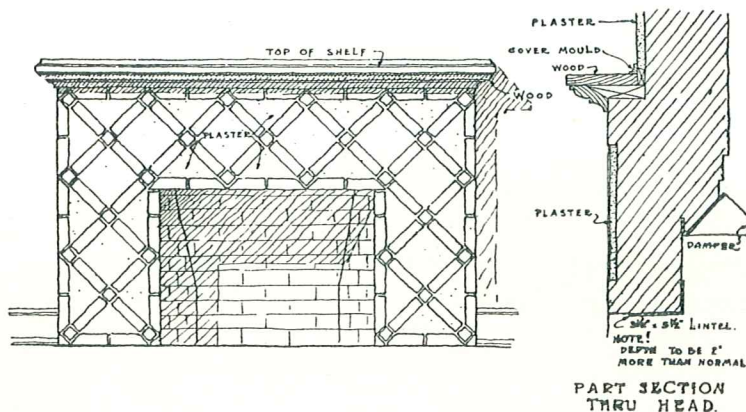
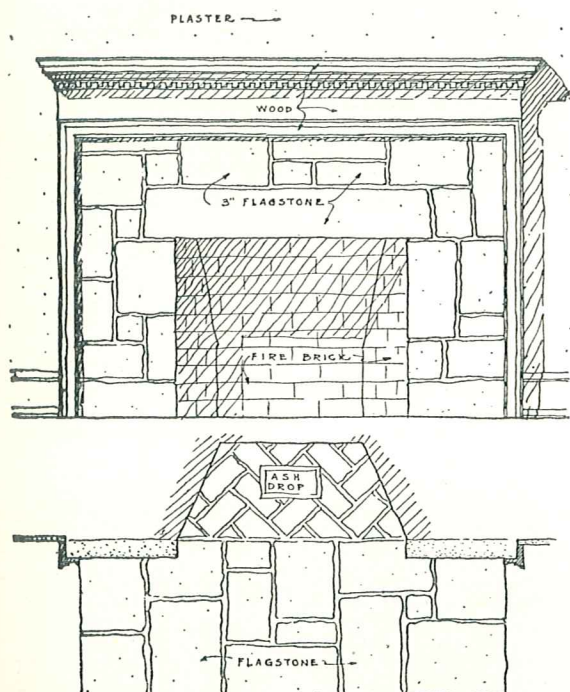
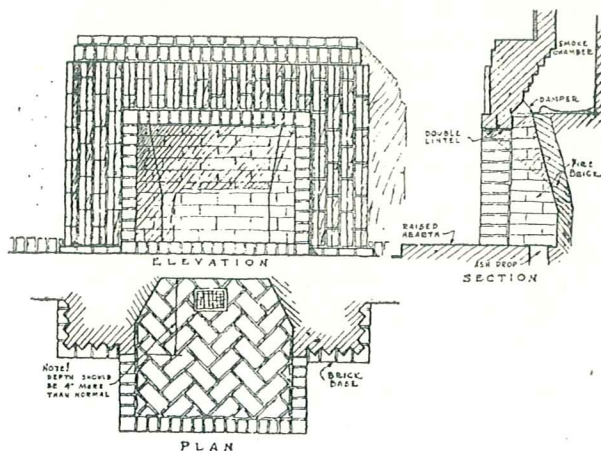
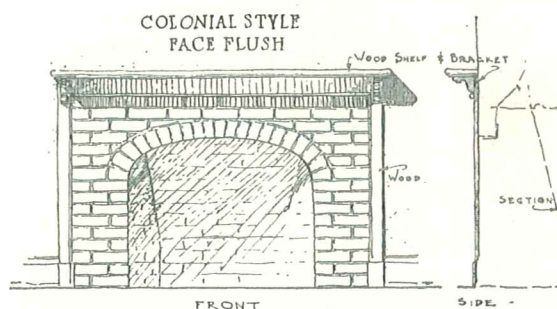
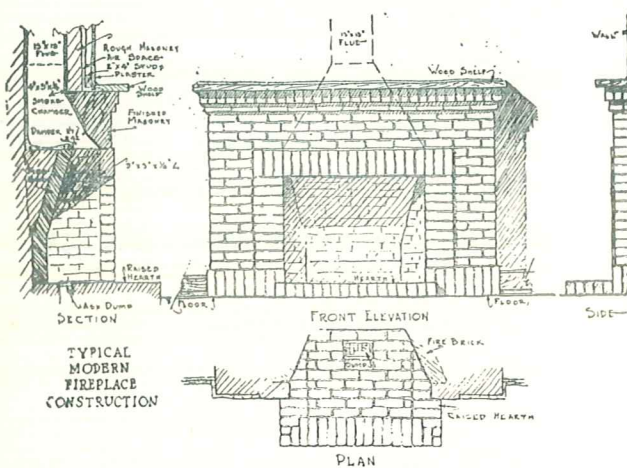
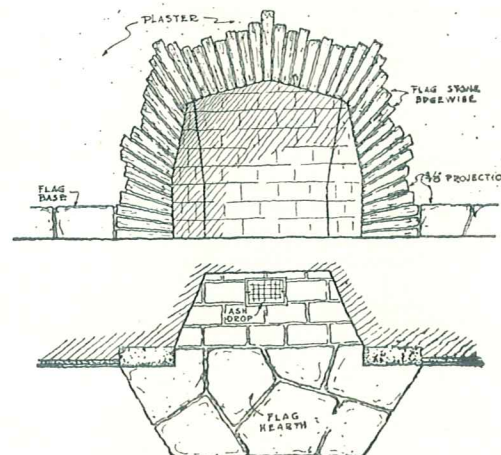
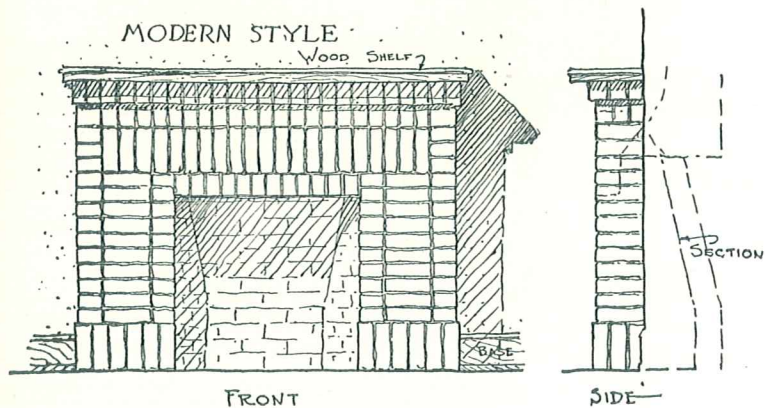
FRONT

SIDE

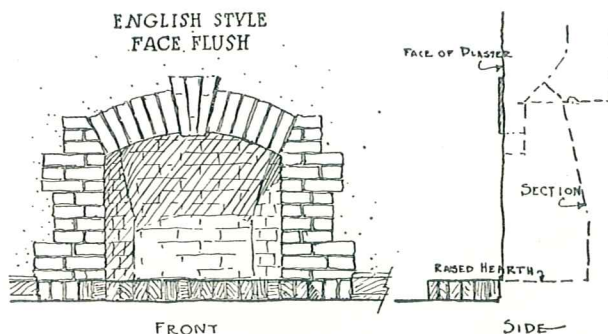
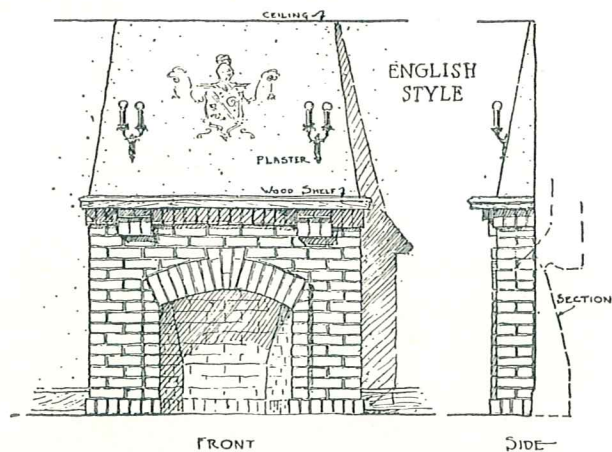
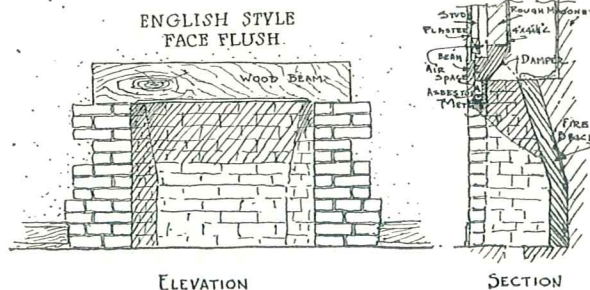
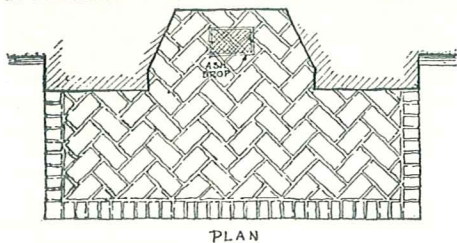
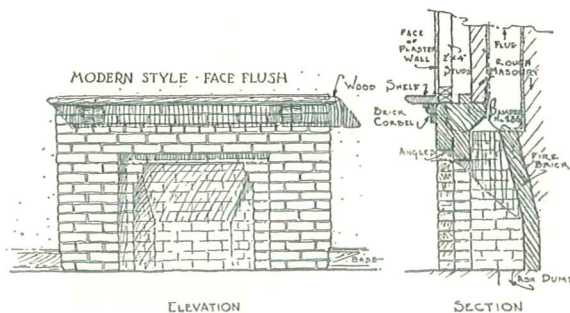
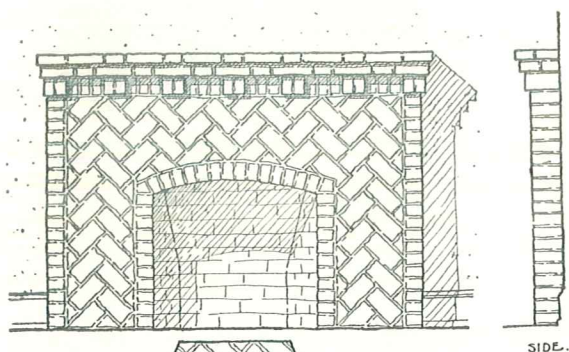
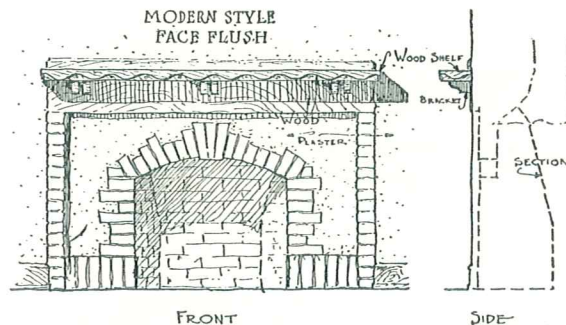
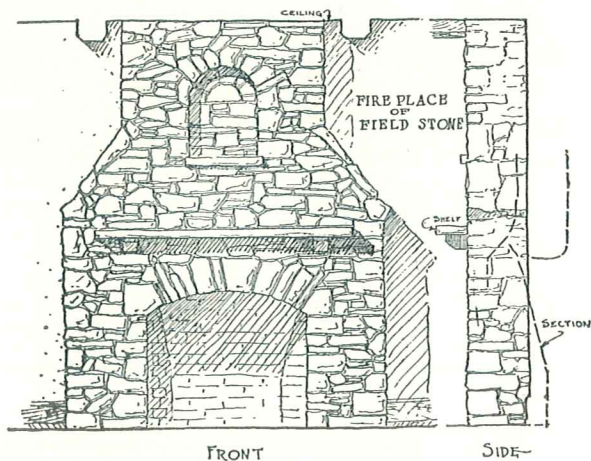
MODERN
STYLE
FLUSH WITH
PLASTER

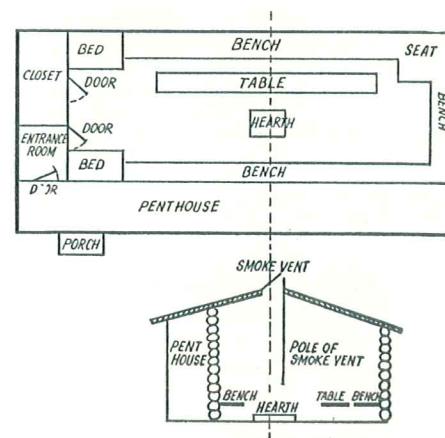
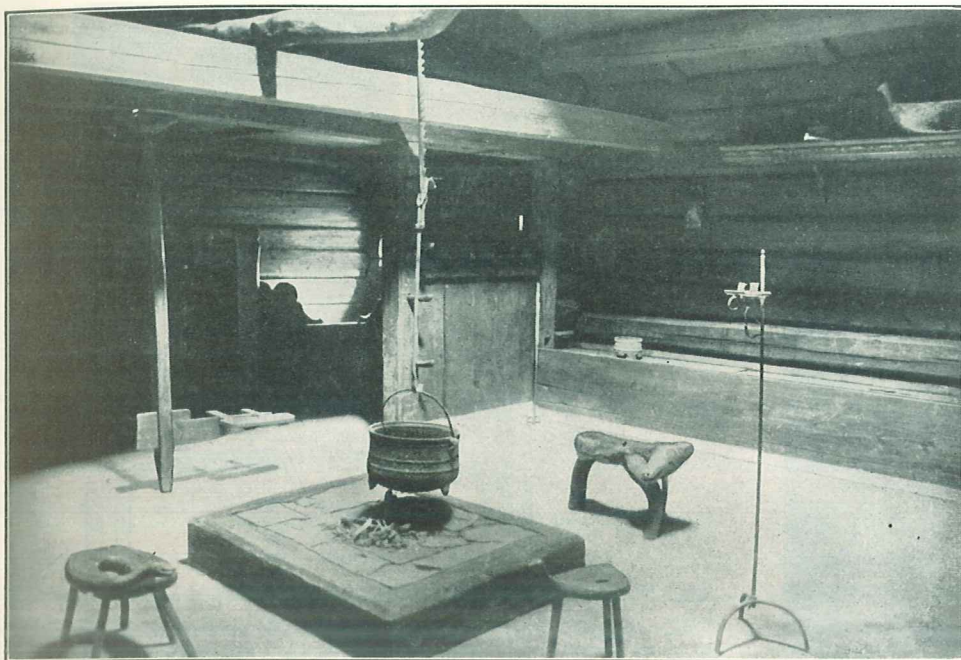


MASONRY FIREPLACE DESIGN



MASONRY FIREPLACE DESIGNS





Sketch by Dean Francis Bacon, of the School of Architecture, Western Reserve University, showing plan and profile of medieval Norse dwelling with central fireplace. Photograph shows restored interior in Scandinavian Museum at Lillehammer, Norway.

AN OUTLINE OF FIREPLACE HISTORY

'Tis like stirring living embers
When at eighty one remembers.

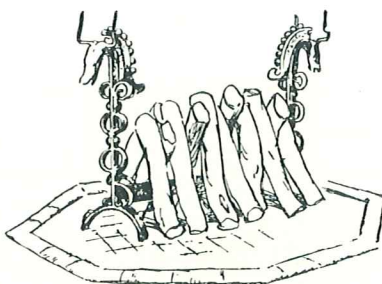
—Oliver Wendell Holmes

You're a King by your own fireside as much
as any monarch in his throne.

—Cervantes

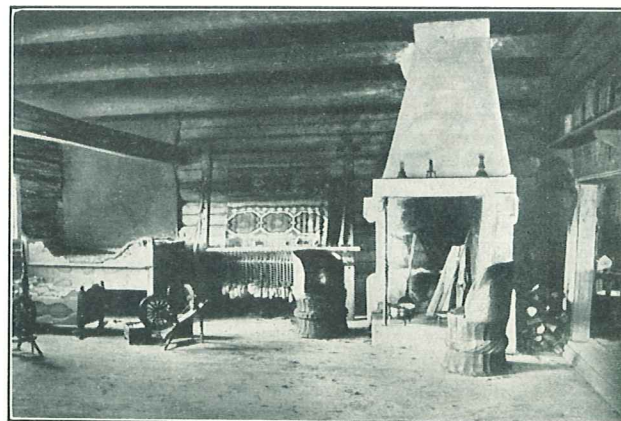
EVERY people known to history have had their fireplace traditions. Indeed, the discovery of means for igniting and using fire marked one of the long steps forward by which primitive humanity found its way to civilized existence. The Greek and Roman classics are dotted with allusions to heating and cooking appliances. It is interesting among other things to know that the word "focus" is the Latin name for a hearth. When we consider our derived use of the term, as "a meeting place for luminous rays", also our more figurative usage as a center of interest, we see the logic of this derivation, for the hearth is truly a focal point of home and family loyalties.

But it is not in the land of classic tradition that we look for the historic source of the fireplace as we know it, since the Mediterranean countries have too sunny a climate to place maximum reliance on artificial warmth. Our fireplace traditions were nurtured in the long



winters of northern Europe, England being the land from which, in the main, America derives its fireplace ideas.

The Central Hearth—In primitive Germanic civilization, as exemplified in the Saxon period of English history, the fireplace was an open hearth in the center of a great hall, which housed the family, the servants and the retainers of the feudal lord. We get an insight into the crudity of those times when we discover that little or no provision was made for the escape of the smoke engendered by such a hearth. It circulated among the rafters and escaped through roof chinks or crude windows.



Also a restored interior in Scandinavian Museum. It shows the hooded fireplace, an early step away from the central hearth type.

SUCCESSFUL FIREPLACES

One of the two quaint pictures from the Scandinavian Museum at Lillehammer, Norway, shown on preceding page, affords a good idea of the central hearth as it existed in northern nations until the fourteenth century and later. With it is a sketch by Dean Francis R. Bacon of the Cleveland School of Architecture. Together they afford an intimate glimpse of home life in more primitive centuries. With it is another picture from the same source that indicates the technique of a later period when the hooded fireplace at the sidewall had been introduced. In each, cooking, sleeping and all the functions of indoor life were pursued in a single room. In very grand homes, the lord and lady would have a separate, unheated, corner bedroom—less comfortable than the retainers' sleeping benches along the wall, because closed against the warmth of the fire.

Real Early American—The significance which fireplaces have held for primitive people throughout all periods is illustrated in the mysterious rites of the Kiva, still observed among American Indians of the Southwest. The Kiva is largely below ground level and roofed over, with a hole in the roof that serves as door and chimney. The drawing shows the provision for down-draft in a separate shaft, with a baffle. The observances of the Kiva form a strictly masculine institution. Sociologists have tried in vain to discover the import of its secret ceremonies. Early Spanish explorers formed the opinion that the interiors were intolerably hot and labeled them "estufas" or stoves.

Early Smoke Louvers—The early central fireplace was both for heating and cooking. It had its counterpart on a smaller scale in the cottages of the peasantry. The one recorded improvement of the period was the erection in some cases of very elaborate louvers over the fire, by which smoke was permitted to escape without the invasion of too much

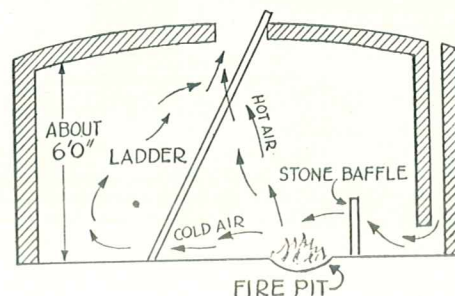


rain and chill. They had a chimney-like aspect from the exterior but with closed top and a variety of lateral outlets for the smoke. It was believed in this period that the smoke from the fire performed a valuable function in hardening the timbers of the house.

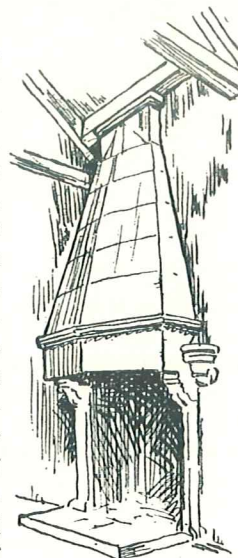
The Hooded Fireplace—In the Norman period England saw its first two-story dwellings, and while in some instances the central hall remained roof high there was an increasing tendency to put the fireplace against the wall, with a sloping stone back and sometimes a mere vent through the sidewall for the escape



Photograph and profile of Kiva where Indians of American Southwest gather for religious observances that remain mysteries to white men.



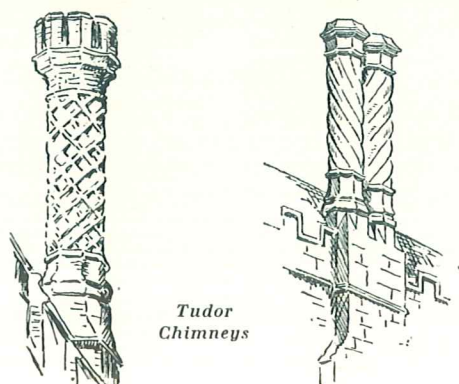
of smoke. From this transient and often unsatisfactory arrangement, the next step was the erection of a chimney with its outlet above the roof. Smoke and fumes were gathered under a hood, often of considerable expanse and usually more than man high above the floor. Gradually the idea of a recessed fireplace succeeded the hood. The fireplace retained its comparatively vast proportions and was often designed with angle nooks at either side, where the inhabitants of the house sat and warmed themselves, actually under the spread of the chimney. Fireplaces of this type persisted especially in cottage architecture down into the Early American period.



Fireplaces Multiply—Meantime, ideas on luxury had so gained that a single fireplace far from sufficed for a baronial mansion. The later Gothic period saw chimneys rising from every side and angle of the great houses of the day, the cause of much conservative lamentation on the score that the race was becoming enervated by so much luxury. The function of the smaller fireplace was recognized and many excellent examples survive. One development of this period was the so-called Tudor chimney, one of the most intricate and characteristic flowerings of late Gothic design. Imagination of the craftsmen ran riot in its

varied forms, many different shapes often being present in the same building.

Development of Design—The history of fireplaces for the ensuing three hundred years is little more or less



*Tudor
Chimneys*

than a history of the periods of design which prevailed successively in the various European countries. The Gothic influence was well on its way out under the Stuarts and we next see classic motifs imported from Italy. Carved oak and stone were replaced by paint and gilt. Then came the humanizing influence of the Queen Anne period, followed by the masterpieces of Georgian design, all of them extensively copied in the work of our own day.

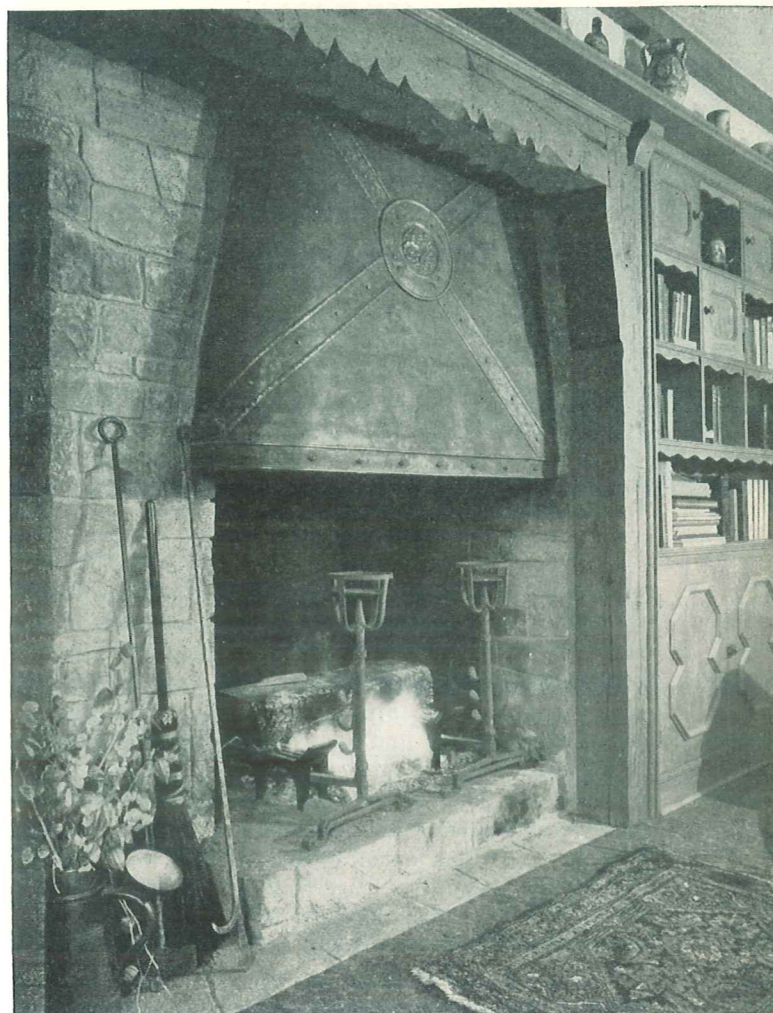
Influence of Fuels—Meantime, a variety of influences were at work in regard to the internal and economic aspect of fireplace building, the first of which was the shortage of wood. This led first to the employment of sea coal and later to bituminous coal which came to be extensively mined in Britain and other European countries. A smaller fireplace sufficed. One of the results was an increase in the building of fireplaces of fixed grate type, an art which was possibly carried to its highest degree of perfection in Scotland, where economy is appreciated.

Early Metal Accessories—The andiron is the characteristic metal accessory of the fireplace which has endured from the earliest times. In the primitive, central fireplace, they were of double construction, with a horizontal bar terminating at each end in legs and upright. When the fireplace became a wall recess, the andiron assumed practically the form in which we find it today. Early andirons often exhibited a variety of hooks or other fixtures from which spits were suspended, to use in cooking meat. The bracketed crane, or sometimes a central chain and hook, were means by which pots were suspended over the fire.

Changes that came with the introduction of gunpowder can be traced in early fireplace metal work.

This colonial type of fireplace is in the summer cottage of the late H. K. Ferguson in Clare County, Mich. Faithful Susie sees that the hearth is swept clean and seems to like it.

SUCCESSFUL FIREPLACES



The influence of the medieval, hooded fireplace is seen in this quaint conception by Nichols and Fritzsche, architects.





There is a charming flavor of early America in this rugged stone fireplace in the home of Amos Moyes, at Lake Cardinal, Ohio, designed and built by the owner.

The older andirons, for example, were invariably wrought. That was the day when the trade of the armorer flourished. Casting of iron, practically unknown until the twelfth century, was stimulated by the demand for cannon in the fifteenth and sixteenth centuries, and we then find andirons of cast metal. There is a great wealth of interesting design associated with both types. Some seventeenth century andirons were richly ornamented with gold and silver. The fireback, a broad and often ornate rear wall for the fireplace, came with the era of cast iron and lasted until our Colonial times. Fuel baskets, either as free units or fixed grates, followed; while the eighteenth century saw many complete metal grates, including walls and fireback—a development that lasted through the nineteenth century.

Franklin's Influence—Benjamin Franklin, America's foremost sage, wrote and planned most effectively in the field of fireplaces, which he calls chimneys. A letter he addressed to Jan Ingenhousz of Paris in 1785 has been re-published in pamphlet form on both sides of the Atlantic under the title, "The Cause and Cure of Smoky Chimneys". It is a remarkably penetrating discussion of the whole range of fireplace facts and principles. Previously in 1744, he had described the "Pennsylvania Fireplace" in a pamphlet offered for sale. It is described in the chapter on Heat Circulating Fireplaces, Page 32.

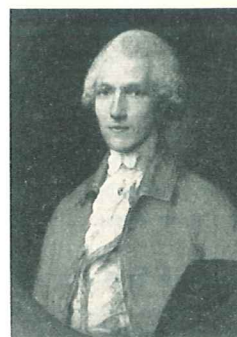
In his profuse writings, Franklin deprecated large fireplaces with their heavy draft of air that drew chilly currents from every door and window crevice, forcing people to huddle near the flame for warmth. He noted the disappearance of firewood near Philadelphia. His Franklin Stove made a more lasting impression on the domestic economy of his day.

Few Americans know of the other Yankee Benjamin, whose last name was Thompson and who, among other distinctions, became the world's leading authority on combustion. Like Franklin, he was born in Massachu-



Authentic Dutch oven fireplace in the century-old home of Francis R. Howe, Mohican Trail, Birmingham, Ohio. Confronting it, today, is the complete electrical equipment of a modern kitchen.

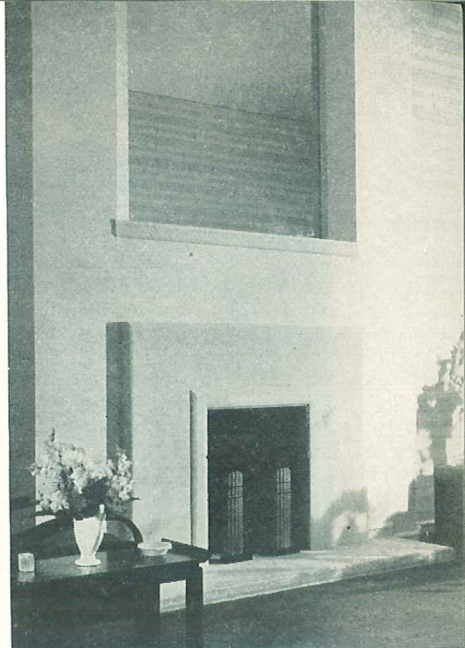
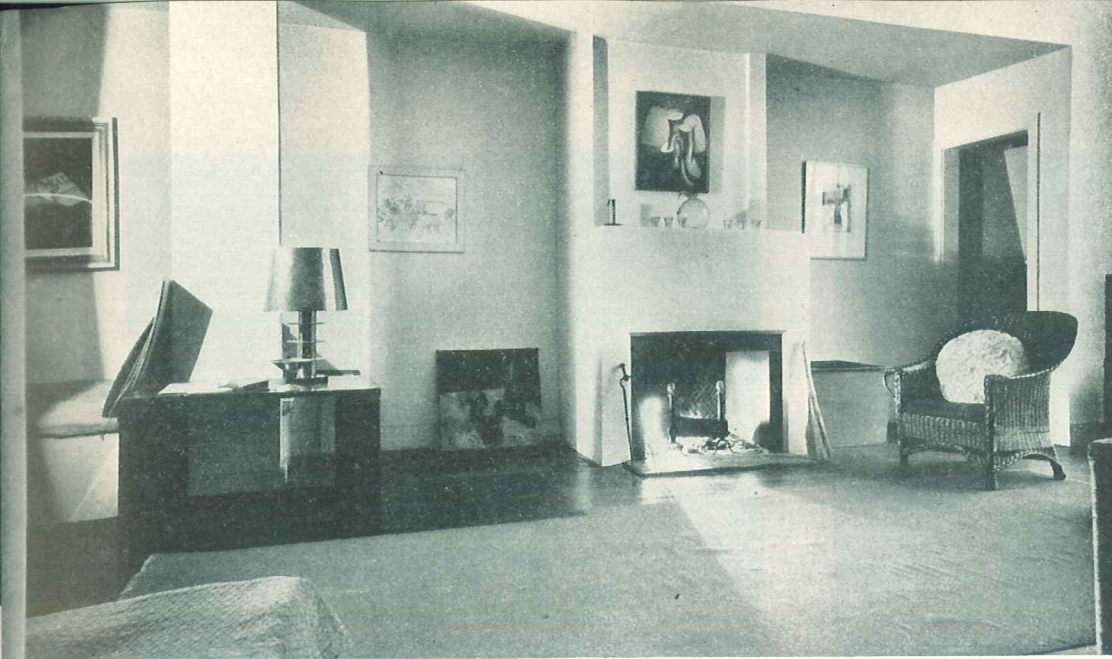
setts, but not until 1753, when Franklin was 47 years old. There is no evidence that they ever met. Accused of Toryism when the Revolution broke out, Thompson became an exile and his brilliant career as public administrator and scientist was enacted in England, Bavaria and France. For ten years he dominated the ministry of Bavaria and the king conferred on him the title of Count. He chose to be known as Count Rumford, since Rumford, N. H., now Concord, had been his last American home. As a scientist, he evolved the theory of heat as a mode of motion. He built a great variety of ovens, furnaces, kilns, etc., developing great skill in the use of firebrick. His hobby was fuel economy. In his treatise on fireplaces, he showed designs with sloping back and splayed sides to reflect heat.



Benjamin Thompson, Count Rumford, from Gainsborough portrait in museum of Harvard University.

He narrowed the throat and provided a smoke shelf to check down-draft. After his Bavarian experience, he returned to England and records that upward of 500 smoky chimneys were under his care for correction. He founded the Royal Institution of London as a place where poor people could learn to solve the problems of living and left it in disgust when scientific associates turned it into a place of pure research. He died in Paris in 1814.

The contrast between Rumford and Franklin is this—that Rumford devoted himself to perfecting the performance of the masonry fireplace and did so to a remarkable degree. Franklin, confronting the same problem half a century earlier, saw the principle of heat circulation, which led him—after creating one superior fireplace—into the field of metal stove practice.



Fireplace history is consummated in the so-called modern designs, of which two excellent examples are shown. The one at the left is in the studio of Earl Horte, Philadelphia. At the right is a fireplace from a model house at Nela Park, near Cleveland, Hays and Simpson, architects.

American Fireplaces—American fireplace practice has offered few departures from that of the mother country. The Pilgrim fathers built wide, deep fireplaces of masonry, usually with one or two Dutch ovens at the side. Their chimneys were generally without baffle, the smoke rising directly through a wide outlet. The more polite mansions of later Colonial days present all the variations of Georgian influence in their exterior design.

Early in the nineteenth century America was prompt to take up the enclosed stove as an improvement on the open fireplace. The fixed grate type of open fireplace is found in the more luxurious homes of the middle nineteenth century but no longer as a major reliance for warmth, a huge base burner often standing in the same room. There was a long period comparatively

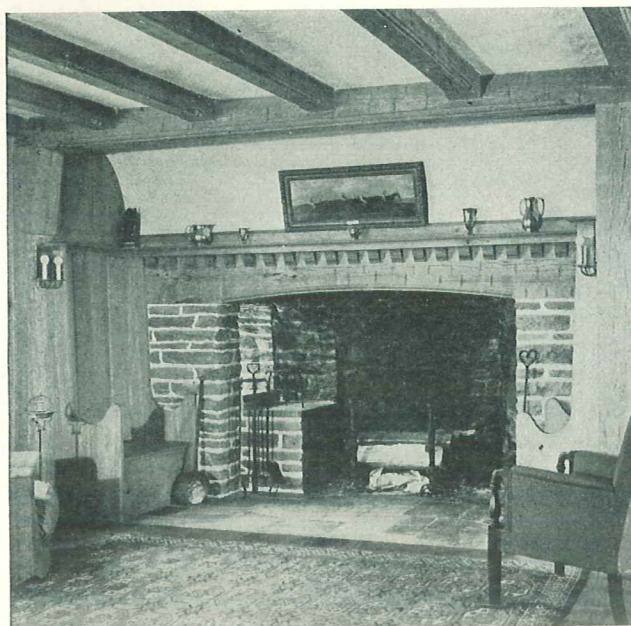
barren of fireplace developments, prior to the revival of the hearth in twentieth century home building.

If there seems to be less practical need for fireplaces since the day when central heating solved major heat questions for the majority of homes, the cultural and sentimental necessity has been brought, thereby, into clearer relief.

But it is far from true that America has relinquished its practical need for fireplaces. In the milder climates of the South and of the West Coast, the need for dissolving the chill of crisp mornings and breezy evenings is charmingly supplied by the open fire. A summer cottage needs no furnace, but there is many a day when the warmth of an indoor fire of driftwood or of forest branches, burned upon the hearth, brings cheer in the place of intolerable shivers.



At the left is the tap room and at the right the "ordinary" at Dunham Tavern, Cleveland, see Page 7. Constructed about 1830, these fireplaces and their surroundings have the true Early American flavor.



Fireplace in Frank Black home, Mansfield, Ohio.
Monroe Walker Copper, architect.

Even in the home most adequately equipped with basement heating plant, occupants experience sub-zero days when the open fire offers a gratifying addition to the sum total of warmth. At such times utility transcends mere sentiment. The eagerness with which heat saving types of fireplace have been received and the ready demand for a fireplace that would heat every portion of simple structures with several rooms is proof that the days of fireplace utility have by no means departed.

In general, the emergence of fireplace practice from the dark ages of the base burner was accompanied by



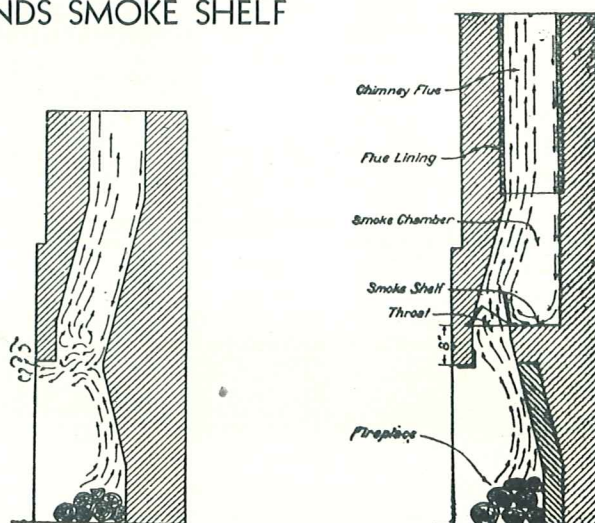
Interest in the compact, corner fireplace with raised hearth is revealed in this fireplace from the Eugene Miles Library in Shaker Heights, Ohio. John Sherwood Kelly, architect, who designed it says its spirit is that of the old Nuremburg stove. Upper part of chimney breast is of modeled cement. Tiles are the old Belgian lion of the same type found in the Plantin Museum at Antwerp. Walls are knotty pine, stained brown; ceiling plastered and painted robin's egg blue.

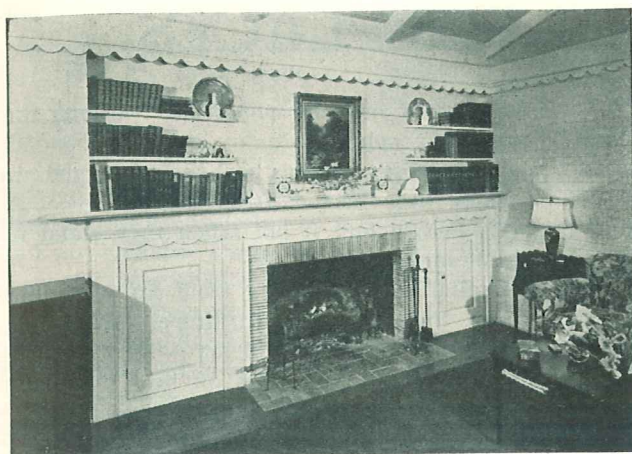
much misdirected effort on the part of fireplace builders. Many fireplaces revealed the honest mistakes of inexperience—many the results of opinionated error. It is scarcely too much to say that, within the recollection of middle-aged men, there was a time when a majority of fireplaces were marred by sooty evidences of emitted smoke or were otherwise unsatisfactory to their owners. It has been the endeavor of The Donley Brothers Company to aid every sincere seeker for enlightenment on the subject of fireplace construction and gratifying to feel that these efforts have contributed to the improved status of fireplace building today.

GOVERNMENT RECOMMENDS SMOKE SHELF

PERHAPS the commonest error in fireplace construction is the omission of the smoke shelf. Some mechanics argue vigorously for a straight, smooth passage—overlooking the fact that such a passage brings down-draft without offering any particular aid to up-draft.

These two diagrams from a publication of the U. S. Government on fireplace practice show the wrong and right ways to plan a fireplace interior. The one at the left illustrates wrong practice—the smoke being blown into the room by down-draft. The diagram at the right shows correct practice (as advocated in the Donley plans) with a smoke shelf on which the down-draft is arrested. The diagram shows also how the valve plate of the damper helps to form a pocket within which the down-draft eddies and turns upward, joining the rising current of smoke.





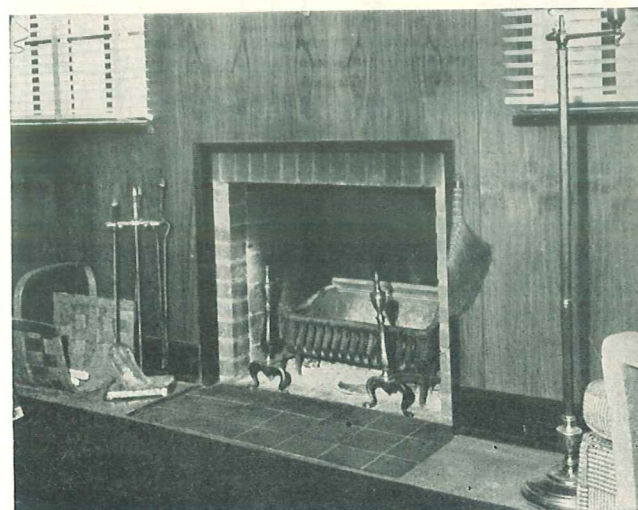
Fireplace in residence of Bartlett Cocke, San Antonio, Texas.



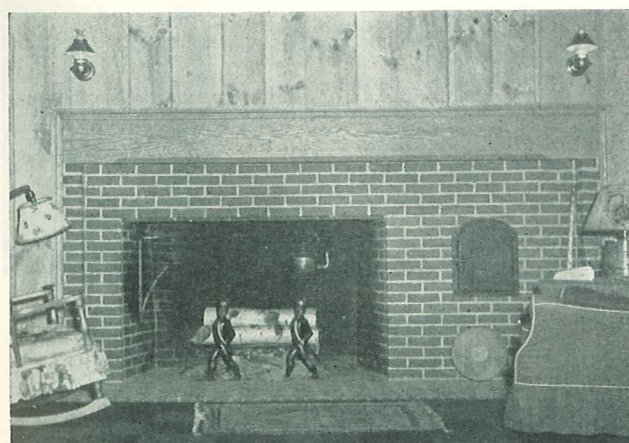
Corner fireplace from the Richard Averill Smith Collection.



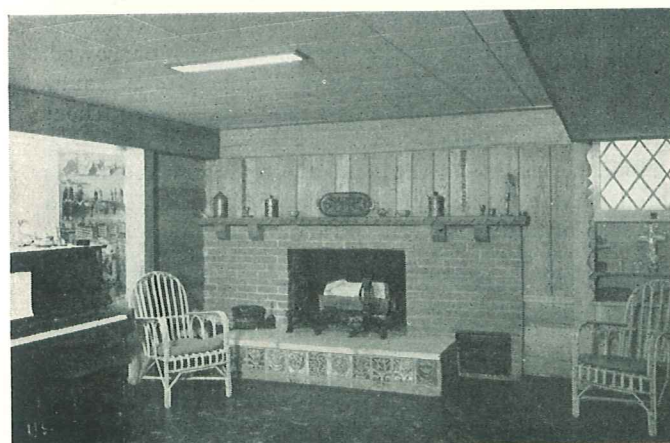
In underground home, designed by Chas. A. Kessinger, architect, Youngstown, Ohio. Photo by R. Marvin Wilson.



Fireplace in home of Sprague Mullikin, Terrace Park, Cincinnati, Ohio—Typical of standard adopted by Gunnison Co., of New Albany, Ind., developers, using Donley plans.



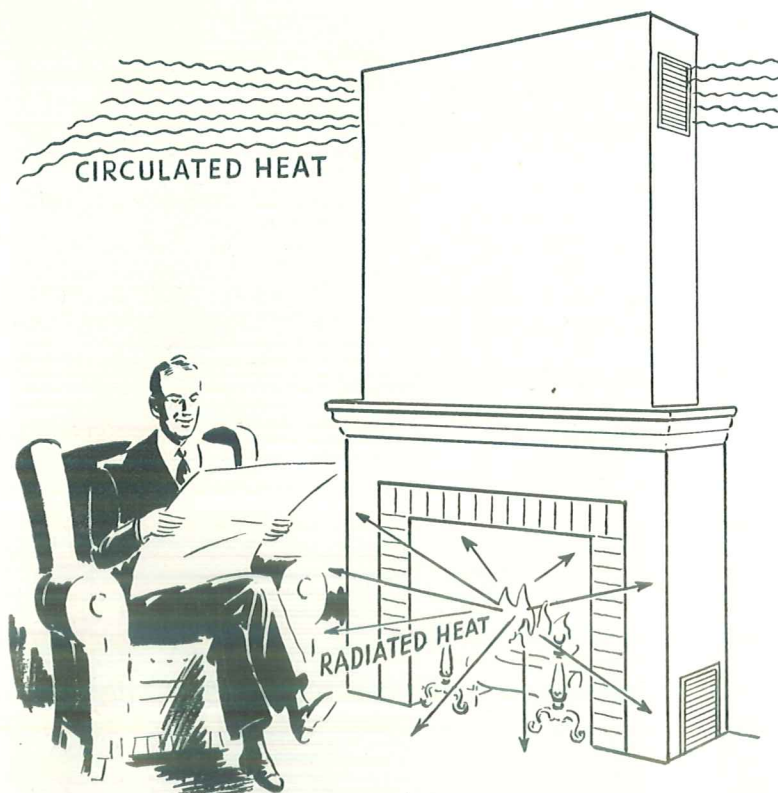
Early American type of fireplace designed by Architect Ralph Francis Flather of Meredith, N. H., for George C. Wells of Laconia, N. H., and built by Henry Leighton & Son of Center Harbor.



There is novelty in the ceramic tile facing of the raised hearth in this recreation room fireplace, built by Delbert Henderson for Allen S. Austin of Cleveland Heights, Ohio.

SUCCESSFUL FIREPLACES

HEAT CIRCULATING FIREPLACES



Representing two types of heat. Arrows indicate radiated heat. Wavy lines suggest diffusion of circulated heat coming from outlets.

THE open masonry fireplace represents man's early solution to the problem of heating and cooking within a dwelling. By modern standards it is not the most highly efficient heating device, heat being wasted up the chimney, particularly the wide, straight chimneys of earlier days.

So abler minds in various eras have been at work on the problem of improving the heat delivery of fireplaces and cutting down the waste.

Count Rumford attempted to do this by making the fireplace smaller, shallower and giving its interior the shape of a reflector, while the throat was narrowed. In Scandinavian countries, heavy canopies of masonry were provided, which became heated and gave off heat after the fire had died down.

Modern practice in the field of fireplace efficiency is based on the principle of circulated heat, used as a supplement to direct radiation from the flame.

Two Types of Heat—This means utilizing two distinct types of heat from the same fire. The heat directly radiated from an open flame may be called radiant heat, while that which comes from air heated and circulated through the room by contact with heated surfaces may be termed circulated or convected heat.

Many people will ask, "Does not the heat radiated from the flame warm the air in the room?" Authorities say that it does not. A comparison may be made with

the rays of the sun which pass through the upper atmosphere without lifting it from its sub-zero chill. It does heat the earth, and air passing over heated areas of land becomes hot. People find it hot when they stand in direct sunlight.

Similarly, direct rays from an open fire warm the floor, the furniture, the people which they encounter. Brick work in the fireplace is heated and gives off heat that must be viewed as convected heat.

Controlled Circulation of Heat—Convected is an established term, related to "conveyed." It has been used for many years to denote the natural rise of warm air and descent of cold air.

Circulated heat is a term that goes a step beyond the meaning of convected heat. It is used to denote the controlled circulation of air—into cold air inlets, then upward past artificially heated surfaces and out into the interior from prepared outlets.

Such circulation of heat is illustrated in the hot air furnace. In the case of the Heatsaver fireplace, the air is heated by contact with the metal wall surrounding the fire chamber of the fireplace. Instead of brick, which absorbs heat and does not conduct it very

effectively, there are metal walls heated by contact with the flame, through which heat passes to heat air in a surrounding hot air chamber. Probably the first man to combine circulated heat with direct radiation from the open flame was Benjamin Franklin.

The Franklin Fireplace—Benjamin Franklin's clear thinking on fireplace subjects has been mentioned in the chapter on Fireplace History (Page 28). An even more practical contribution was his pamphlet on Pennsylvania Fireplaces, published in 1744, in which he described a form of fireplace construction that must be regarded as the first heat circulating fireplace.

It was designed as a means of remodeling existing fireplaces which were mostly of a largeness which he deprecated. Besides certain changes in the masonry, his plan called for the installation of a metal unit formed from cast iron plates, cleverly fitted together and tied by two long rods. Franklin speaks of the Pennsylvania Fireplace as in actual use and says the parts are available,



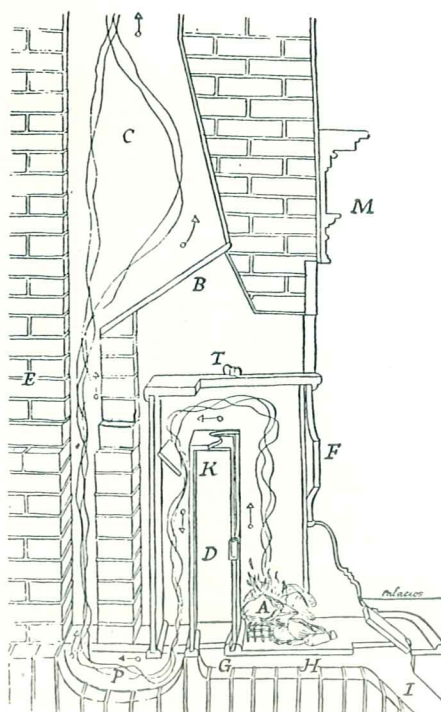
Head of Benjamin Franklin from statue in Franklin Institute, Philadelphia.

but mentions no names. He does not claim it as an invention but it was probably his own, since he would have been prompt to give credit to another.

Fire is built in the forward chamber of the metal unit. Heat and smoke pass over the top of a central hot air chamber being drawn down behind it to a level below that of the hearth and then discharged upward behind a false fireback of brick. The false back was connected with the fireplace front by a sloping slab of stone or slate above the metal unit. Air was drawn from outdoors through a conduit below hearth level and discharged from the hot air chamber through outlets in its side.

Means Even Heating—Franklin's exposition of the advantages of this kind of fireplace remains the classic presentation of the heat circulating fireplace. It means even heat throughout the room, he explains. Instead of being toasted on one side and chilled on another, people were comfortable on both sides. If reading or spinning, they did not need to hug the fire but could sit beside a window to the benefit of their eyesight. No window drafts because the entire intake of air came through a conduit below the hearth.

Modern Circulating Fireplaces—It took America 180 years to catch up with Benjamin Franklin's precept that a fireplace should circulate heat as well as radiate.



FRANKLIN FIREPLACE

F—Front of metal unit. G, H, I—Cold air duct. D—Hot air chamber. K—Hot air outlet. P—Passage for smoke under false back. B—Removable slab connecting false back to fireplace breast. T—Nut at head of rod. A to C—Course of flame and smoke. From rendering by Rafael D. Palacios in *The Ben Franklin Reader*, edited by Nathan G. Goodman. Courtesy of Thomas Y. Crowell Co., publishers.

it. The pioneer among modern heat circulating fireplaces is the Heatilator. Priority helped to impress its name on the public so that many people call any heat circulating fireplace a Heatilator. As a matter of fact there are at least six such fireplace units, each with its own design and claims for special advantage.

Objects of the Heatsaver—The Donley heat circulating fireplace is named the Heatsaver. It came on the market a few years after the modern advent of this type of heating device. Its development was not hurried. We sought to avoid copying any rival device and went to the root of the problem.

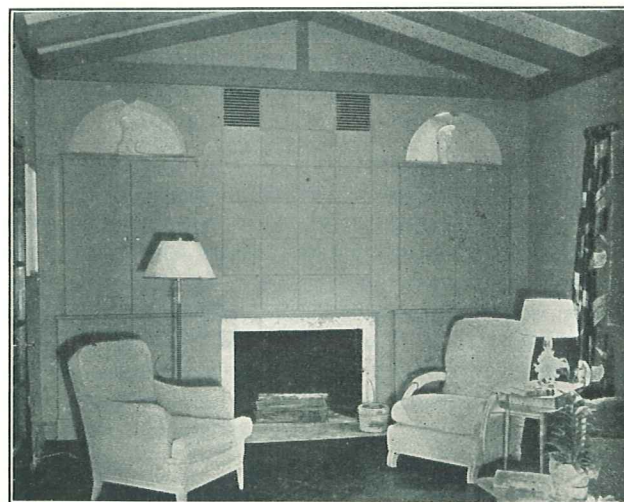
In some other devices, all the heated surfaces utilized were those located below the smoke shelf. In others, emphasis was placed on collecting heat from surfaces above the chamber, such as the smoke chamber.

The Heatsaver is alone in its consistent utilization of heat from both sources, above and below. In carrying out this object, we saw the advantage of collecting heat from the hottest spot of the firebox, the area just where the back slopes forward.

Here a duct is located that collects and circulates heat, contributing greatly to the efficiency of the Heatsaver.



The home of Mrs. Burnetta Carroll in Shaker Heights, Ohio, has a recreation room arranged and decorated by her daughter, Mrs. Johnson. A Heatsaver fireplace keeps it cozy.



Mrs. Helen J. Faber says she greatly appreciated the warmth of this Heatsaver in her Ft. Lauderdale, Fla., home.

SUCCESSFUL FIREPLACES

Heatsaver Fireplace in the home of Henry C. Zuengler, Strongsville, Ohio. Note shoulders over fore hearth and recesses beneath for kindling and tools. Heat is also piped to two upstairs rooms.



DONLEY HEATSAVER FIREPLACES

AS set forth in the preceding chapter, the most efficient fireplace is the one that heats and discharges warm air, utilizing heat that might be absorbed in the back and sides of a masonry fireplace. The Donley Heatsaver is such a fireplace.

It not only increases warmth, but directs the circulation of heated air where desired, by the location of its warm air outlets.

The Heatsaver Fireplace consists of a welded steel unit, with a fire chamber and upper smoke chamber surrounded by a warm air chamber from which heat is discharged through pipes, like a small furnace. It is installed in masonry by the builder and differs little in appearance, if at all, from the usual masonry fireplace. All the beauty of exterior design and charm of the open flame is preserved and combined with the comfort derived from warm air circulation.

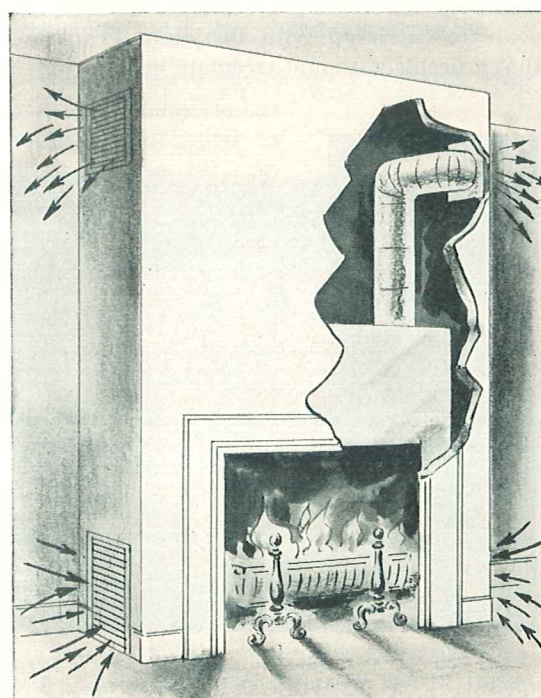
Heats Many Low Cost Homes—The Heatsaver serves either as an independent heating plant, or as an auxiliary, according to the structure in which it is located and the purposes of owners. Many low cost homes are heated through severe winters by Heatsaver fireplaces with satisfaction to enthusiastic owners. In milder climates, it is often the sole heating device in larger residences. It is highly regarded by cottage owners whose need for heat is seasonal or occasional, but who want cheery warmth quickly when they want it at all.

Aid to Heating Economy—Ability of the Heatsaver to bring comfort to a sizable interior is a great source of economy in homes that have a central heating plant.

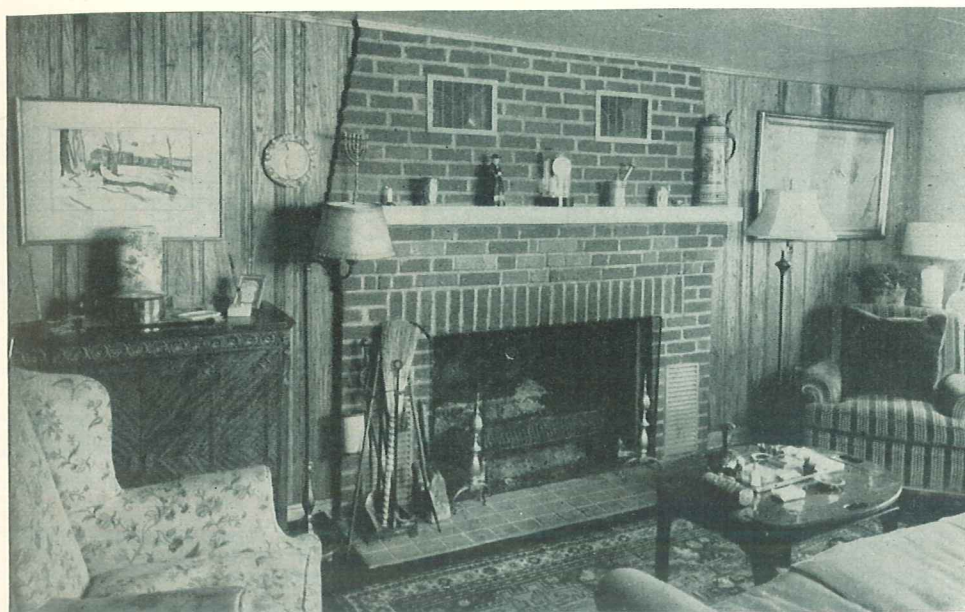
It relieves the furnace or boiler during the chilly months of the spring and fall when the maintenance of a furnace fire would be burdensome and costly.

Refuge in Holiday Areas—The many clubhouses and lodges that dot the seaside, mountain and forest resort areas all need a means of quick and gratifying warmth when a day of yachting, fishing, skiing or hunting

It comes out here.



It goes in here.



In a secluded spot in the eastern portion of Cuyahoga County, Ohio, Dr. Paul Albrecht has built a rambling, one-story home that is largely heated by this Heatsaver fireplace. Heat is ample, says the owner. In fact he has to exercise caution in the size of the fire or the interior gets too hot for comfort.

comes to an end and it is time to gather and swap experiences. The Heatsaver affords the warmth, the bright glow symbolic of fellowship. It utilizes whatever the country affords in the way of driftwood or forest wastes.

For Week-End Cottages—Among the most loyal friends of the Heatsaver are owners of rural cottages used for week-end relaxation. Such cottages are becoming constantly more abundant in every rural area surrounding centers of population.

In Public Buildings—The pastor's study can be heated by a Heatsaver, so can rooms for occasional week-day

use, without firing the boiler that heats the Church auditorium. Clubs that meet only occasionally can similarly maintain a warm office or lounge.

Means a Better Fireplace—Wherever a fireplace is desired, use of a Heatsaver means a better fireplace. It is properly proportioned for clean, smooth operation. Beyond this it assures both kinds of heat, radiated and circulated. Cold corners are banished and the whole interior has an even warmth, sought by Benjamin Franklin in his Pennsylvania fireplace, and always recognized as the true goal of fireplace performance.

Installing the Heatsaver

DURING the suspended production of the war period, the Heatsaver was redesigned and the unit illustrated here differs from those previously shown. Principles are not affected and the effect on installation is slight. The motive has been to increase the exposure of interior metal to the warmth of the flame, for a given size of fireplace opening.

In doing this, we have departed from the characteristic shape of the fire chamber that distinguishes the Donley masonry designs. The sides are not splayed. The purpose of splaying in a masonry fireplace is to promote the reflection of heat into the room from the backwall and sides. But in the Heatsaver, reflected heat is a secondary object. The heat which passes through the metal wall of the fire chamber, heating the air in the surrounding air chamber, is the more important object.

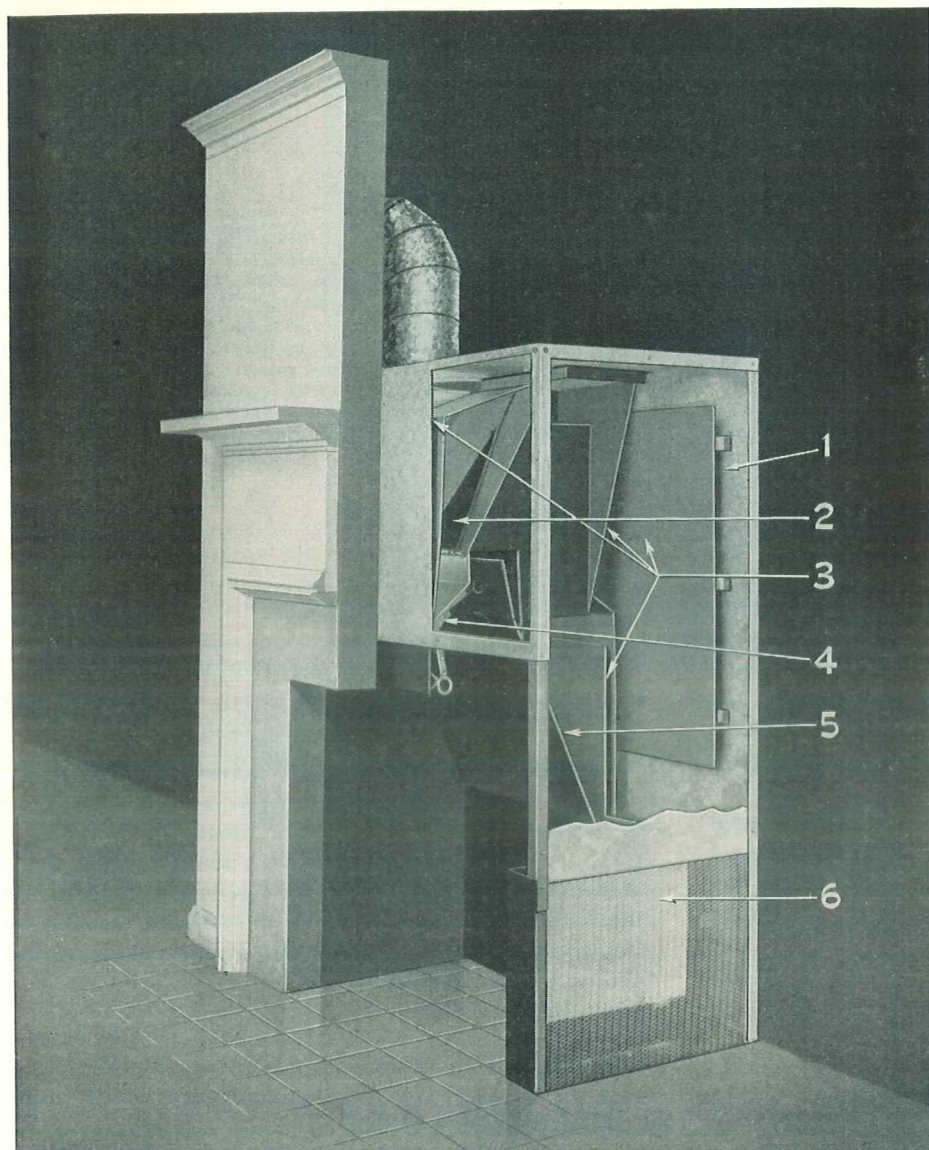
This permits wood fuel to be burned at its full length, either at the front or back of the fire space.

Besides this, the smoke chamber has been redesigned with an improved passage that utilizes the heat just above the damper, affording circulation through from front to back. The Donley Fire Basket is described on Page 62.

Control of Circulation—The first problem confronting the designer of a home employing a Heatsaver is the use he is to make of the circulated heat which the unit affords. Four suggestions are shown on Pages 43 and 44 that embody simplified floor plans for low cost homes.

The metal outer case of the Heatsaver is made to be pierced for outlet pipes, as is a furnace, the usual number of outlets being two.

The Outlet Question—Location of a Heatsaver generally involves consideration of the whole floor plan. If it is to heat other rooms than the one in which it



Section Shows Construction of Heatsaver

1. Large warm-air chamber.
2. Warm air duct through smoke chamber that equalizes the heat.
3. Baffle sheets keep outer shell cool and increase delivery of heat through ducts.
4. Donley poker control damper.
5. Quarter inch steel plate used for smoke shelf and back of fire chamber.
6. Cold air inlet screened to prevent entrance of rodents.

Question of Circulation—

The purpose of the location of grilles is to assure the most effective circulation of heat. When the upper out-

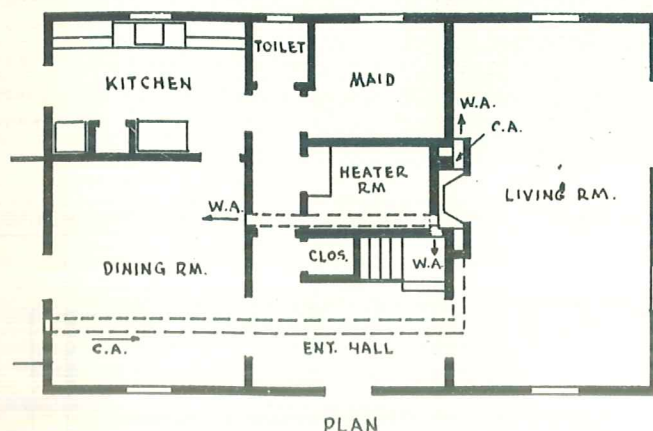
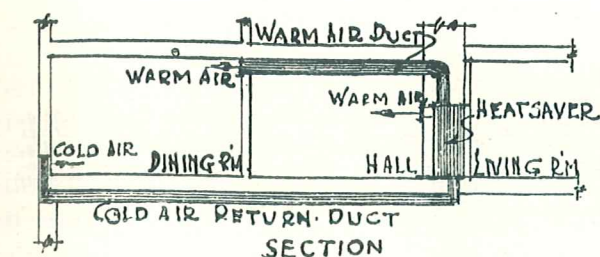
lets discharge in adjoining rooms, the travel of air back to the inlet grilles must be considered.

Inlet grilles are located so near the floor that few esthetic questions are involved in placing them. They do influence the distribution of warm air to a marked degree. If an outlet discharges into a bedroom on the opposite side of the wall, and the bedroom door is kept closed, circulation will be impeded. In such cases, it is well to place an inlet also in the same room, so that circulation can be completed. If discharge is made into a room that connects with the room immediately heated by an open arch, the location of the inlet is not so important.

Use of Long Conduit—In general, the Heatsaver should be relied upon for heating the immediate room, or rooms, above or adjoining the one in which the unit

is located, an interior position for the fireplace chimney is to be preferred. Three of the designs shown are of that type. If only the immediate room is to be considered, a chimney in the outer wall may be chosen.

The question of projection also arises. Many architects prefer that the outlet grilles, which are necessarily somewhat above the level of the Heatsaver casing, should not be unduly conspicuous. Location at the side of a projection solves this problem. Installations may be cited where grilles are further masked by location in shelving, on which pottery or art objects are not too closely grouped, so that the warm air is not obstructed. However, outlet grilles above a fireplace are becoming more accepted through custom and, in many cases, are presented for what they are, in a tint that harmonizes with the wall tones.



is located. However, success has been reported in a number of cases where warm air has been conducted across intervening space to a room beyond.

Use of a long, horizontal warm air pipe should be undertaken with judgment and caution. The best assurance of success comes through locating a cold air inlet at the opposite side of the room to be heated.

In fact, the use of a long cold air conduit is one of the surest methods of promoting circulation, even where the warm air outlet is in the immediate vicinity of the Heatsaver. Such a conduit is most easily located beneath the floor. Since its function is to conduct cold air, it can be made of any material, lumber, plywood or wall board. The mere enclosing of space between two joists accomplishes the purpose, providing there is proper access to a well located inlet.

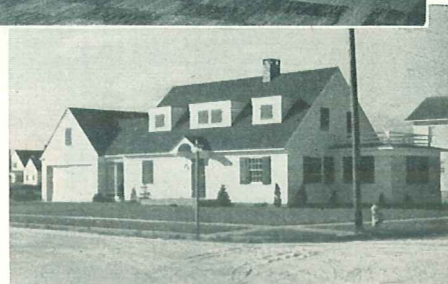
The Sanford Fox residence, pictured here, offers an example of such a conduit. Another that has come to our attention is one that has been installed in the dining room of Luders' Log Cabin, a public eating place at Elma, New York. The Heatsaver Fireplace, pictured at right, spreads its warmth over a large area because of a cold air inlet located on the opposite side of the room.

Some of the illustrations show a warm air outlet centrally located beneath the mantel. This was formerly an optional feature of the Heatsaver, but was found to involve complications in the method of installing and is no longer recommended. Omission involves no sacrifice of warmth as the passage through the smoke chamber at this level still remains and its heated circulation passes upward and out through the higher grilles.

SUCCESSFUL FIREPLACES



Sanford Fox at Ocean City, N. J., owns this home in which dining room beyond 10-foot hall is heated by Heatsaver. Note how cold air is drawn from opposite side of dining room.

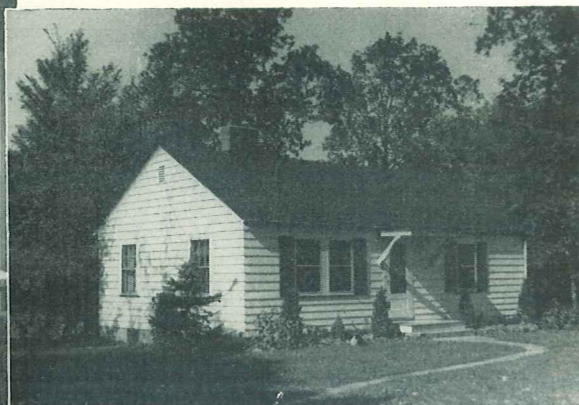
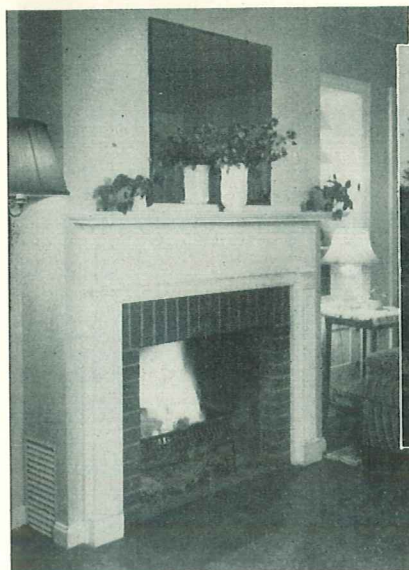


Heating Small Residence—Many so-called low cost homes are being heated by Heatsaver Fireplaces with little or no assistance from other heating installations. That pictured is an example. It occupies a rural site in Northfield, Summit County, Ohio. There is a small oil furnace in the basement, but when the Heatsaver is lighted, the thermostat on the oil heater usually shuts it off, excepting in the coldest weather.

In such installations, it is best to locate the Heatsaver against an inside partition, rather than an outer wall. The floor plan shows that heat is discharged into the kitchen at the rear of the Heatsaver, also by



"I believe I have the most economical and efficient fireplace ever built," says Elmer Luders, proprietor of Luders' Tavern, Elma, N. Y. Built by Mason Contractor Herbert Schmidt of East Aurora, this fireplace has its cold air intake on the opposite side of a large dining room, thus drawing heated air across the room.



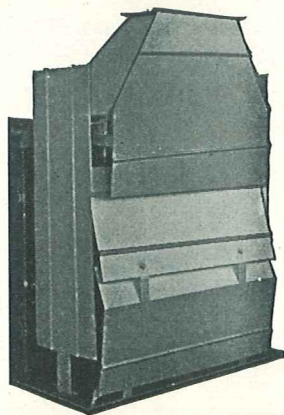
Low cost home in Northfield, Ohio, where Heatsaver carries the whole heating responsibility, under ordinary conditions, serving bathroom and kitchen as well as living room.

a pipe above the cellar stairs, to the bathroom. Return of air to the inlets located in the living room probably promotes a general circulation through the interior more effectively than could be done with a long return conduit.

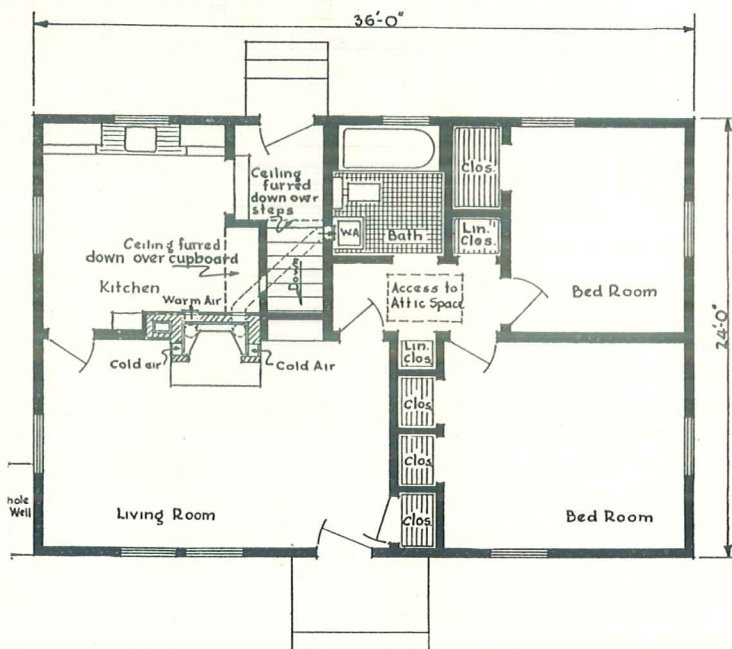
Construction of the Heatsaver—There has been no compromise in making the Heatsaver a staunch, lasting unit. It consists of an inner fire chamber and smoke chamber above it, all surrounded by a metal shell which encloses the warm air chamber. The heating man who installs your Heatsaver will pierce this outer shell in connecting the heating pipes.

The back of fire chamber and the smoke shelf are of $\frac{1}{4}$ -inch steel plates. The balance of the smoke chamber is of No. 12 gage steel, while the outer shell is of No. 26 gage galvanized steel.

Between the inner unit and the outer shell are baffle sheets, shown at the right, whose purpose is to increase the heated area of metal over which the air passes. It also keeps the outer shell cool and completely avoids any danger of fire to materials that come in contact with it, so long as circulation is maintained. The baffle sheets direct the flow of air from the outer shell to the heated surfaces of the unit.



This shows the Heatsaver unit with baffle sheets attached, but without the outer shell. These intermediate surfaces greatly increase area of heated surface and keep outer shell from becoming dangerously hot.

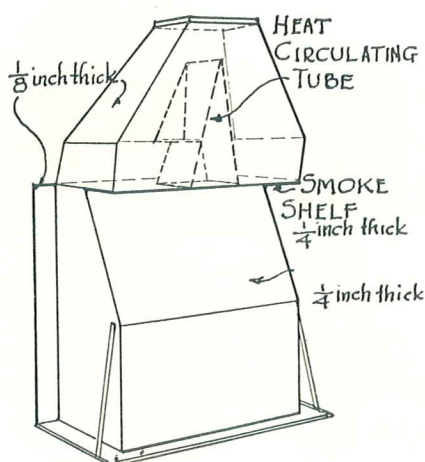


Selecting the Proper Size—In choosing a Heatsaver for a given location, consideration must be given to (1) the cubical contents of the room in which it is located and (2) that of the whole space to be heated, the space available (3) for the fireplace itself and the extent of reliance (4) on fireplace heating as well as (5) the size of the flue. All this helps and yet

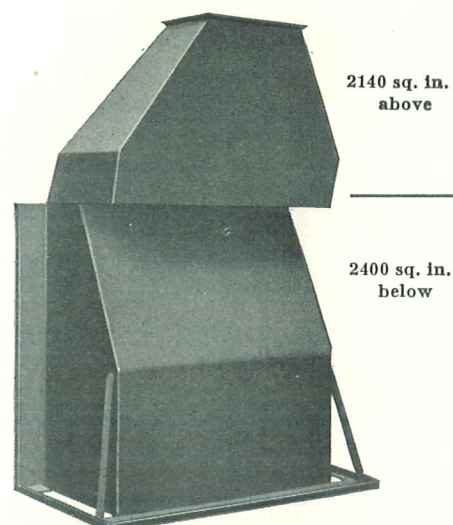
Size of Room in Feet	Heatsaver Size When Located On	
	Short Wall	Long Wall
10 x 14	No. 26	No. 26 — 30
12 x 16	" 26 — 30	" 30 — 34
12 x 20	" 30 — 34	" 34 — 42
12 x 24	" 30 — 42	" 34 — 42
14 x 28	" 34 — 42	" 42 — 48
16 x 30	" 34 — 42	" 48 — 54
20 x 30	" 42 — 48	" 54 — 60

it is not possible to reduce such a calculation to mathematical terms since a final determining factor in the effectiveness of the Heatsaver is the size of fire that the owner chooses to build. If typical fires are of moderate size a large Heatsaver unit is probably less effective than a smaller one, since in the latter case the flame is in closer contact with the metal walls through which heat is convected. Remarkable heating efficiency is reported from units of 34-inch opening or less where a lively fire is maintained. The table above may be helpful, as a starting point of calculations.

Dimensions of the Unit—Before deciding finally what size to use in a given location, a designer will want to know all the dimensions to be incorporated in his design. The table at the right, with the reference diagram, will give the needed information. On the question of projection into the room the designer will get help from three plans at the bottom of the page.

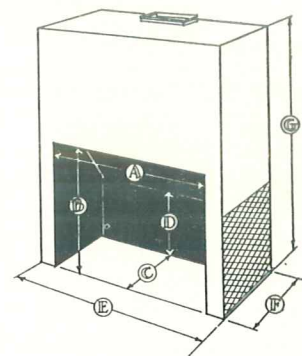


The drawing corresponds to the view at the right, each showing Heatsaver unit with outer shell and baffle sheets removed. The triangular tube or duct that carries air through the smoke chamber is important to maximum heat delivery.



This illustrates an advantage of the Heatsaver, the large percentage of heat delivery from heated surfaces above (as well as below) the smoke shelf. The measurements given are for the No. 34 unit.

Heat-saver No.	HEATSAVER DIMENSIONS							Shipping Weight
	A	B	C	D	E	F	G	
26	26	24	16	16	33	21	51	308
30	30	28	16	16	38	21	55	355
34	34	28	16	16	42	21	55	395
42	42	30	18	16	50	23	62	500
48	48	30	18	16	58	23	62	565
54	54	34	20	18	66	26	80	890
60	60	34	20	18	72	26	80	1030



Method of Installation—Formerly we have described a method by which the rough masonry niche was completed first and the unit backed into it. Testimony of architects and builders convinces us that it is generally best to locate the unit on the hearth first and build the masonry around it. This avoids the difficulty of backing a heavy unit within close tolerances.

Location of Cold Air Inlets—The outer wall of the metal Heatsaver unit has large open areas at the lower portion of each side. They are screened with expanded metal to prevent entrance of vermin.

The purpose of these screened openings is to afford access of cold air. They are made much larger than the actual, visible cold air inlets, in order to give freedom in the placing of those inlets.

The inlets take the form of metal grilles. A variety of shapes and sizes are available.

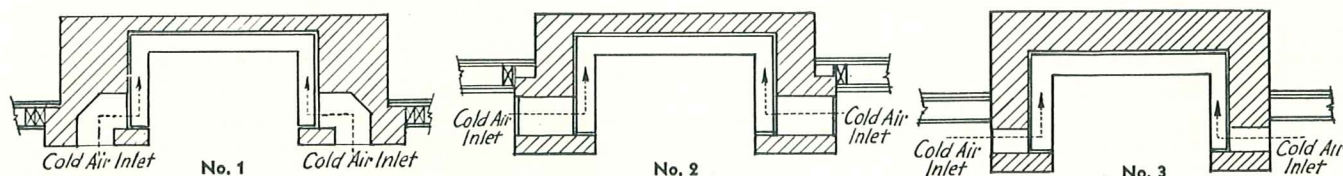
Where the fireplace is flush with the wall it is usual to locate the grilles each side of the fireplace opening and near floor level.

If the fireplace projects from the wall it is usually possible to locate grilles in wall projection, so that they will be less conspicuous. Cold air inlet grilles are louver shaped to shield interior from sight. Outlet grilles are simple in design, as ornamental grilles tend to be conspicuous and subject to style change.

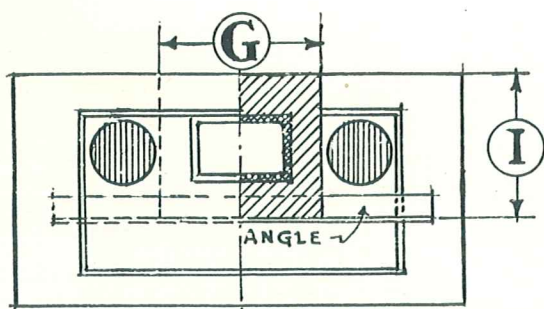
It is most important, however, to have them large enough and to avoid any arrangement that interferes with the flow of air. An ample outflow of warmed air is better than a smaller flow of hotter air. Plenty of inlet space assures this object.

An Important Principle to bear in mind is the fact that warm air, from the warm air outlet, tends to circulate in the direction of a cold air inlet. If such outlet is located in an adjoining room, the result is

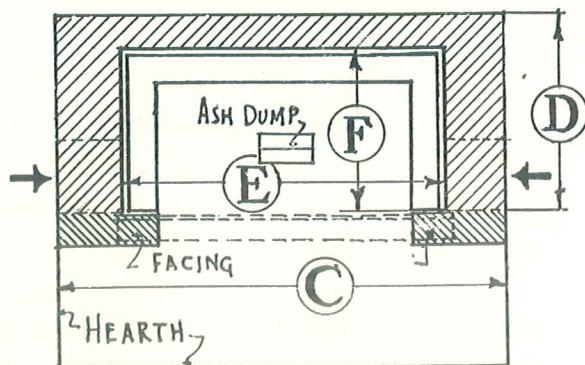
Showing three arrangements • cold air inlets



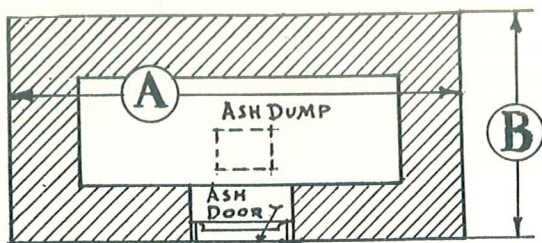
SUCCESSFUL FIREPLACES



PLAN ABOVE HEATSAVER



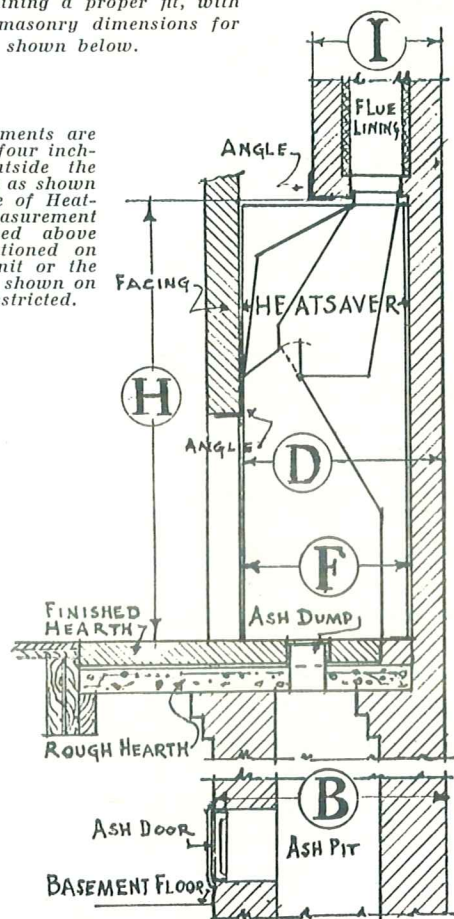
PLAN ABOVE HEARTH



PLAN BELOW HEARTH

Plans of Heatsaver installation at three levels assist the designer and installer in obtaining a proper fit, with aid of rough masonry dimensions for different sizes, shown below.

G and I measurements are for a minimum of four inches of masonry outside the standard flue lining as shown below for each size of Heatsaver. The G measurement cannot be increased above the minimum mentioned on the 26" and 30" unit or the warm air outlet, as shown on drawing, will be restricted.

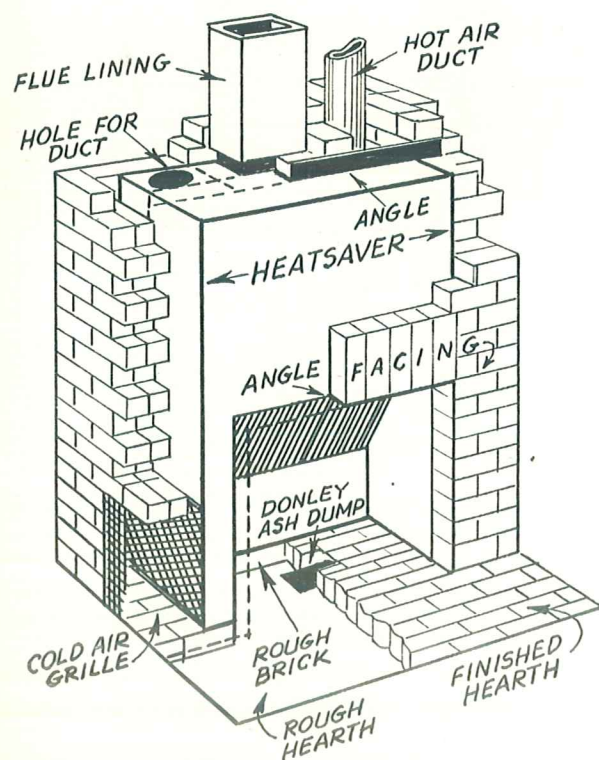


SECTION ON CENTER LINE

ROUGH MASONRY DIMENSIONS FOR BRICK CONSTRUCTION

Heatsaver Number	Below Hearth		Above Hearth		Heatsaver Recess Dimensions			Flue Size
	Width	Depth	Width	Depth	Width	Depth	Height to Lintel	Over-All Dimensions
	A	B	C	D	E†	F	H	
26	50	30	50	26	34	22	52	8½ x 8½
30	55	30	55	26	39	22	56	8½ x 13
34	59	30	59	26	43	22	56	8½ x 13
42	67	32	67	28	51	24	63	13 x 13
48	75	32	75	28	59	24	63	13 x 13
54	83	35	83	31	67	27	81	13 x 18
60	89	35	89	31	73	27	81	13 x 18

Notes—†This measurement is one inch more than size of unit. Center of flue should be directly above center of dimension. Regarding dimensions G and I, shown at upper left of sketch, these will vary with the character of the face material. See note above.

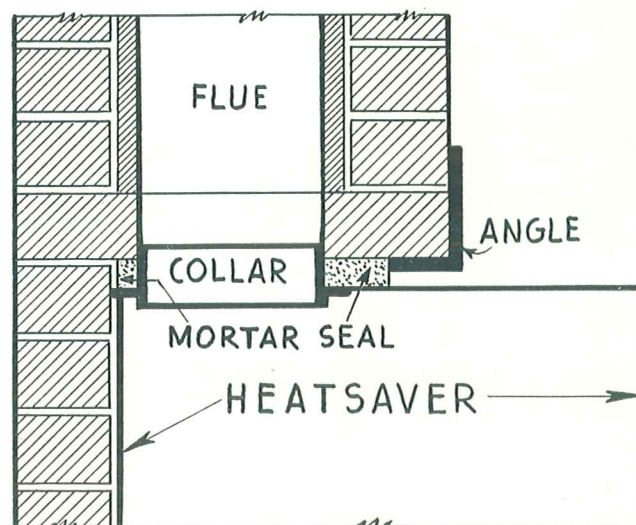
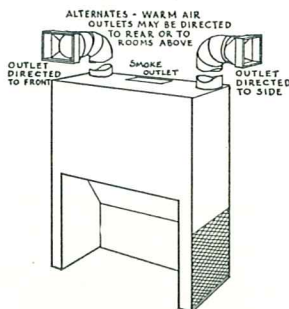


circulation through both rooms. Rarely is it advisable to locate cold air inlet at a distance from the unit. Exceptions are shown in the case of Luders' Tavern, on Page 37, where it was necessary to circulate heat across a wide dining hall. Also on Page 37 is the case where conduit is carried past an intervening hall to heat a room beyond.

Both of these cases are described in the text near the illustration. In other, more typical cases, however, the effect of bringing inlet near the outlet might be to short circuit the warm air.

Note Suggested Designs—on Pages 43 and 44. In No. 4, the inlet is located in an adjoining room, to assist in warming kitchen-dining room and bath.

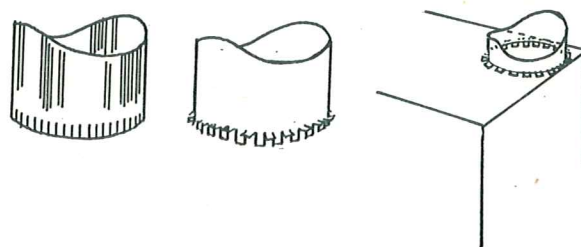
Arrangement of Warm Air Outlets—The outer shell of the Heatsaver is meant to be pierced for pipes, as in furnace practice. Two round outlet pipes on the two ends of the top satisfy any but the most exceptional requirements, since they can be carried to any height and turned forward, sideways or to the rear. Round pipes are suggested, since they afford maximum capacity for a given diameter and since all fittings are usually available anywhere. If necessary to change to rectangular pipe to meet a particular condition, it is



recommended that round pipe be carried up from the unit to the place where it is necessary to change and the change effected there with a foot piece.

Attaching Flue—If the unit is put in place before the brick work is erected, the fitting of the flue to the Heatsaver should not cause any complications. It is facilitated by a mortar collar projecting above the Heatsaver. Care should be taken to see that mortar and debris do not get into the unit itself. Note also that the front chimney masonry is supported on an angle, not by the body of the unit.



Helpful Donley Service—The Donley Brothers Co. hopes that its customers will make use of the Heatsaver's adaptability to varying conditions of layout. The Donley service department is glad to make suggestions of the way to meet different situations and to answer questions from the standpoint of experience with many installations. Write us about your heat circulating fireplace problems and we will answer to the best of our ability.



Method of Attaching Pipes—A good way to attach pipes is to snip narrow leaves around the bottom and turn up alternate leaves to form a flange. After seating the pipe on this flange, reach down through the section of pipe and turn up the leaves that pass through. The joint can then be finished with a collar of asbestos fabric, cemented in place. Sketches above indicate three steps.

Necessary Equipment for Installing Heatsaver Fireplace

(All Dimensions in Inches)

Fireplace Opening and No.	Ash Dump No.	Ash Pit Door	Steel Angle for Fireplace Opening	Steel Angle for Chimney	 Cold Air Intake Grilles No. 57 Steel Installed as A, C, D, E, B	 Upper Warm Air Outlet Grilles No. 53 Steel	Round Warm Air Ducts from Unit to Outlet Grills	Outlet Boxes at Upper End of Ducts
			C—3x3x $\frac{3}{16}$ D—4x3x $\frac{1}{4}$	A—5x3 $\frac{1}{2}$ x $\frac{3}{16}$ B—6x4x $\frac{3}{8}$			See Note	
26x24 No. 26	58	12x10	C-30	A-45	{ Use 2 No. 57 9x13 Or 2 No. 57 6x19	Use 2 No. 53 11 $\frac{3}{4}$ x 9 $\frac{1}{4}$	8	10x8
30x28 No. 30	58	12x10	C-36	A-50		Use 2 No. 53 11 $\frac{3}{4}$ x 9 $\frac{1}{4}$	8	10x8
34x28 No. 34	70	12x10	C-42	A-54	{ Use 2 No. 57 9x15 Or 2 No. 57 6x23	Use 2 No. 53 11 $\frac{3}{4}$ x 9 $\frac{1}{4}$	8	10x8
42x30 No. 42	70	12x10	C-48	A-62		Use 2 No. 53 11 $\frac{3}{4}$ x 9 $\frac{1}{4}$	8	10x8
48x30 No. 48	70	12x10	D-54	A-70	{ Use 2 No. 57 9x19 Or 2 No. 57 6x29	Use 2 No. 53 13 $\frac{3}{4}$ x10 $\frac{1}{4}$	9	12x9
54x34 No. 54	70	15x12	D-60	B-78		Use 2 No. 53 13 $\frac{3}{4}$ x10 $\frac{1}{4}$	9	12x9
60x34 No. 60	70	15x12	D-66	B-84		Use 2 No. 53 13 $\frac{3}{4}$ x10 $\frac{1}{4}$	9	12x9

Note: Galvanized piping and tinned outlet boxes for warm air outlets supplied when ordered.

On orders where pipe, elbows and outlet boxes are included, but the number of each required is not indicated, the following quantities of appropriate sizes, being sufficient for the average installation, will be shipped:

2—2'0" Lengths of pipe
2—1'0" Lengths of pipe

4—Adjustable elbows
2—Outlet boxes

Be Sure to Make Your Heatsaver Order Complete

Every installation of the Heatsaver calls for certain supplementary items of equipment. Often we receive orders that take no account of this necessity. A person ordering "one No. 34 Heatsaver" may assume that he has sent a complete order when, as a matter of fact, it is deficient in at least ten items, listed in the next column under the heading, "Standard Accessories for Heatsaver".

If you send an order for one Heatsaver and Accessories, we will fill the order by including the items listed opposite, with change of sizes to conform to size of Heatsaver ordered.

Sent With Standard Accessory Order

When your order comes for "One Heatsaver (size stated) and Accessories," we will ship the required number and size of the ten accessories listed below. Assuming that you order a No. 34 Heatsaver, you will receive the following:

1	No. 34 Heatsaver (state size desired).
1	No. 58 Ash dump.
1	12x8 Ash-pit door.
1	3x3x $\frac{3}{16}$ x42" steel angle.
1	5x3 $\frac{1}{2}$ x $\frac{3}{16}$ x54" steel angle.
2	No. 57 grilles 9"x15".
2	No. 53 grilles 11 $\frac{3}{4}$ "x9 $\frac{1}{4}$ ".
2	24" lengths of 8" galvanized pipe, K.D.
2	12" lengths of 8" galvanized pipe, K.D.
2 or 4	Elbows of 8" galvanized pipe.
2	Outlet boxes 8"x10".

Proper Sizes of Optional Equipment

Equipment	Heatsaver Number						
	26	30	34	42	48	54	60
Glass Screen	10	20	40	50	60	spl.	spl.
Log Rests. .	16"	16"	16"	16"	16"	20"	20"
*Crane	No. 1	No. 1	No. 2	No. 2	No. 3	No. 4	No. 4

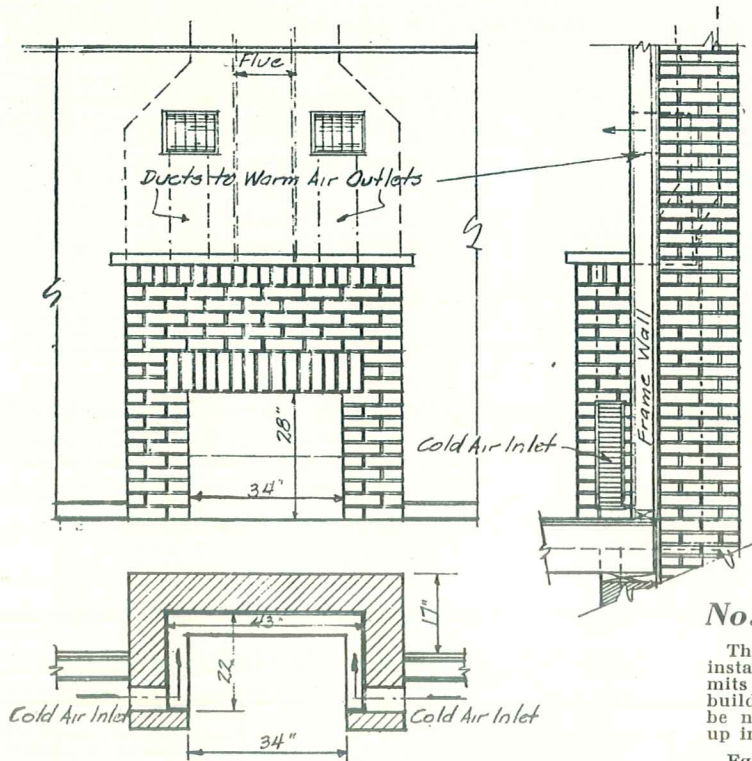
Note: Supporting lugs are welded to side of unit at factory at no extra charge if crane is ordered with Heatsaver.

Optional Equipment

(Not shipped unless specially ordered)

1	30" fireplace basket.
1	No. 2 crane.
1	Fireplace Screen No. 1, 36"x29".
1	Andirons No. 158.
1	Fireset No. 248.

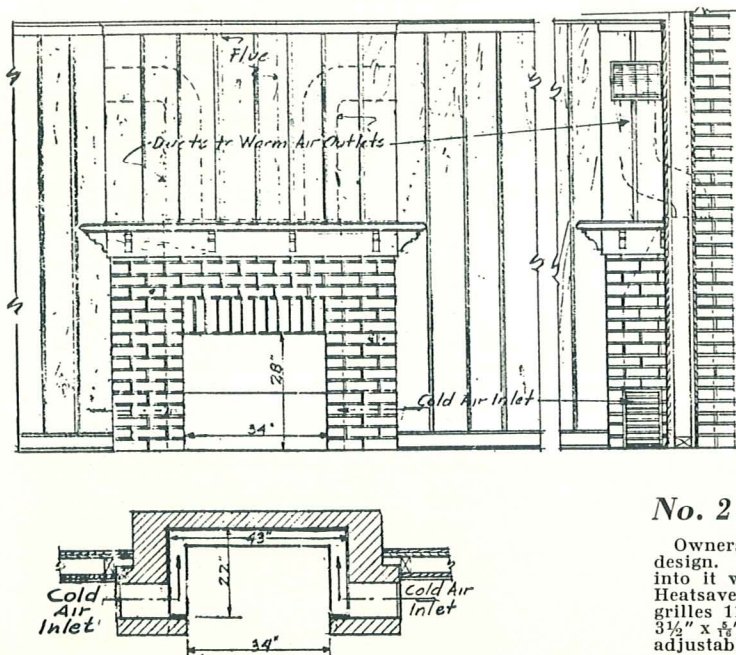
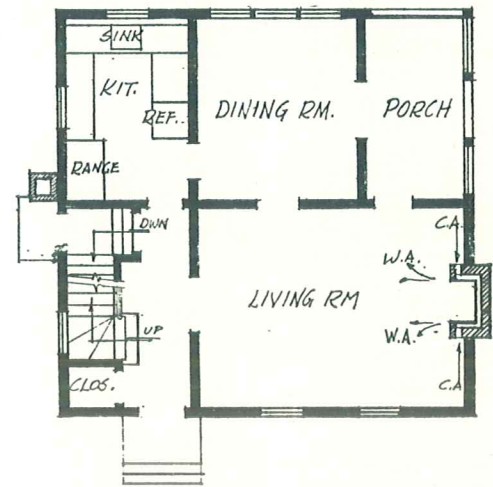
Suggested Heatsaver Fireplace Designs



No. 1 Where Fireplace is Lacking

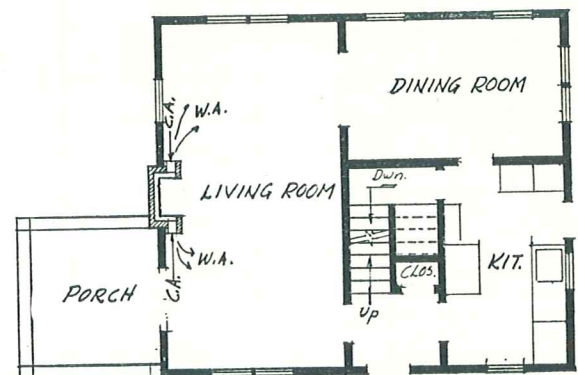
This design is well adapted to cases where it is desired to install a fireplace in a standing home which has none. It permits installation of a flue entirely outside a frame wall and building a fireplace with a minimum of cutting. The flue, it will be noted, is sloped backward, while heating ducts are carried up in the masonry and turned forward.

Equipment to carry out this design includes a No. 34 Heatsaver unit; two No. 57 cold air inlet grilles, 6" x 23"; two No. 53 warm air outlet grilles, 11 $\frac{3}{4}$ " x 9 $\frac{1}{4}$ "; two steel angles—one 3" x 3" x $\frac{1}{8}$ " x 42" and one 5" x 3 $\frac{1}{2}$ " x $\frac{1}{8}$ " x 54"; two lengths of 8" round galvanized pipe 2' long; two adjustable elbows 8"; two outlet boxes 8" x 10".



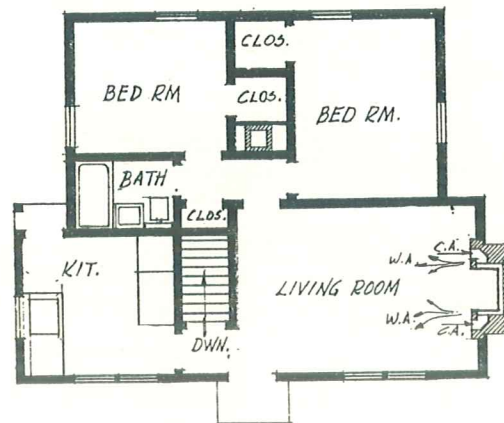
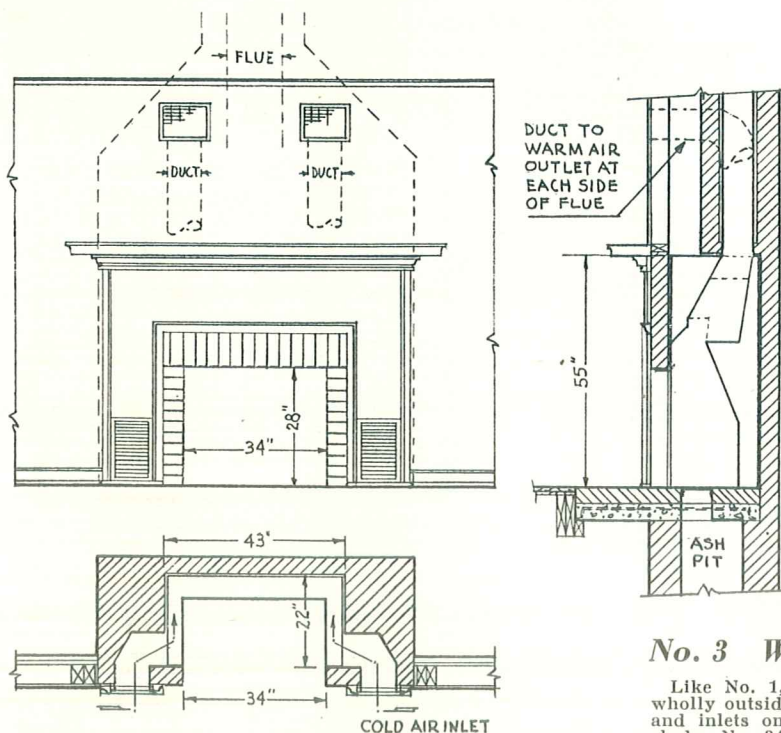
No. 2 Where Room Permits Projection

Owners who insist that outlet grilles be inconspicuous may like this design. It calls for a room large enough so that fireplace may project into it without apparent crowding. Necessary equipment—One No. 34 Heatsaver unit; two No. 57 inlet grilles 9" x 15"; two No. 53 outlet grilles 11 $\frac{3}{4}$ " x 9 $\frac{1}{4}$ "; two steel angles—one 3" x 3" x $\frac{1}{8}$ " x 42" and one 5" x 3 $\frac{1}{2}$ " x $\frac{1}{8}$ " x 54"; two lengths 8" round galvanized pipe 2' long; six adjustable elbows and two 8" x 10" outlet boxes.

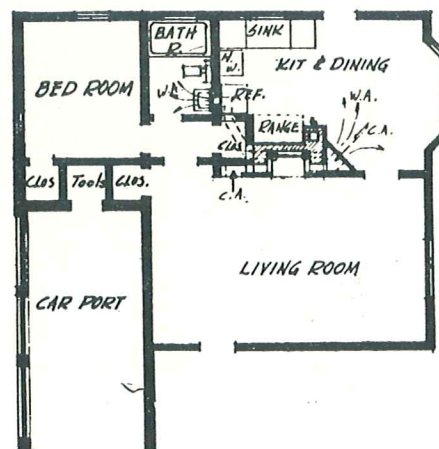
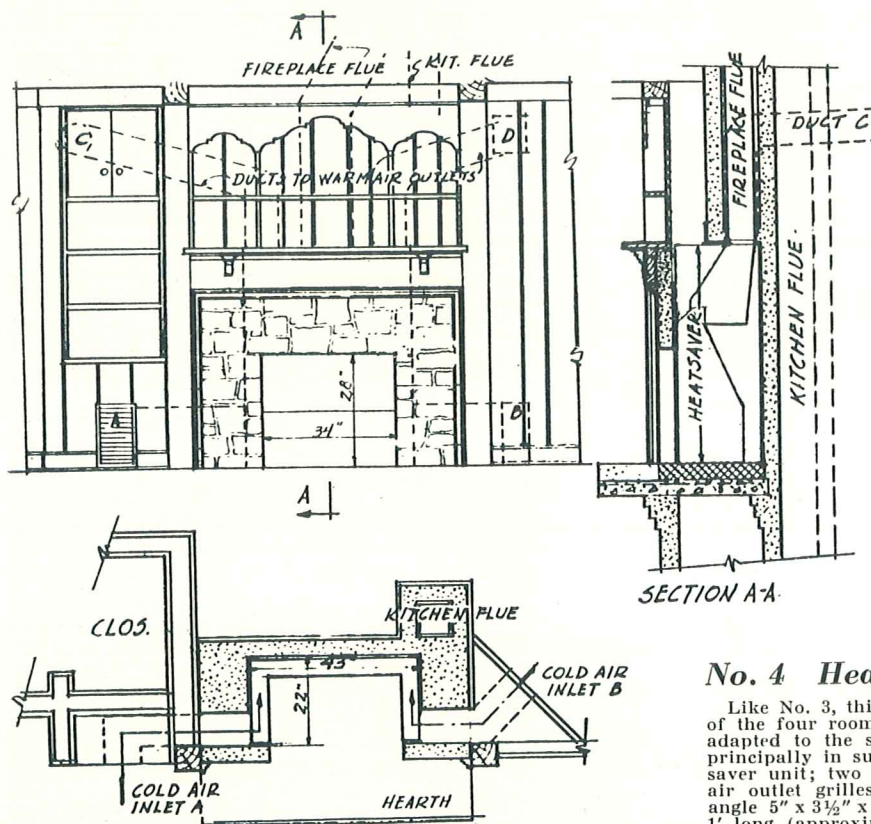


SUCCESSFUL FIREPLACES

Suggested Heatsaver Designs, Continued

**No. 3 Where Chimney Outside**

Like No. 1, this design is adapted to remodeling, since the flue is wholly outside the frame wall. More nearly flush with wall than No. 1 and inlets on the facing beside the fireplace opening. Equipment includes No. 34 Heatsaver; two No. 57 cold air inlets 9" x 15"; two No. 53 warm air outlet grilles 11 $\frac{3}{4}$ " x 9 $\frac{1}{4}$ "; two steel angles—one 3" x 3" x $\frac{1}{8}$ " x 42" and one 5" x 3 $\frac{1}{2}$ " x $\frac{1}{8}$ " x 54"; two lengths 8" galvanized pipe 2' long; 2 adjustable elbows and 2 outlet boxes 8" x 10".

**No. 4 Heating Adjoining Rooms**

Like No. 3, this installation introduces heat directly into three of the four rooms, making use of an overhead duct. It is well adapted to the small home in mild climates or a cottage used principally in summer. Necessary equipment—One No. 34 Heatsaver unit; two No. 57 cold air inlet grilles; two No. 53 warm air outlet grilles; one steel angle 3" x 3" x $\frac{1}{8}$ " x 42"; one steel angle 5" x 3 $\frac{1}{2}$ " x $\frac{1}{8}$ " x 54"; 4 lengths of 8" round galvanized pipe 1' long (approximate); one length of same 2' long; five adjustable 8" elbows; two outlet boxes 8" x 10".

A Page of Heatsaver Fireplaces



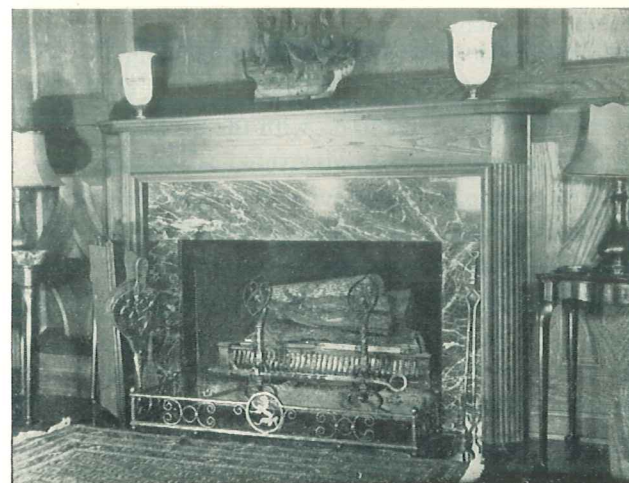
This Heatsaver Fireplace with the Spanish touch, so popular in southern latitudes, belongs to Mr. and Mrs. N. D. Fraser of Sarasota, Fla.



The guest house on the suburban estate of Mr. and Mrs. Galen Rausch at Peninsula, Ohio, is heated by this Heatsaver Fireplace.



The Thomas Barratt home, Paul Ockert, architect, is located in the Chagrin Valley, east of Cleveland. It is the scene of this splendidly appointed Heatsaver Fireplace.



Heatsaver Fireplace in home of Norman J. Stupp, St. Louis, Mo.



The guest house of W. D. Callaghan in Geauga County, Ohio, is a 100-year-old barn, remodeled under direction of Architect John Sherwood Kelly. This Heatsaver is one of two, installed back to back.



Mr. and Mrs. John Braun greatly enjoy this Heatsaver Fireplace, installed in their suburban home on Rockefeller Boulevard in western Lake County, Ohio.

SUCCESSFUL FIREPLACES

PROJECTING CORNER FIREPLACES

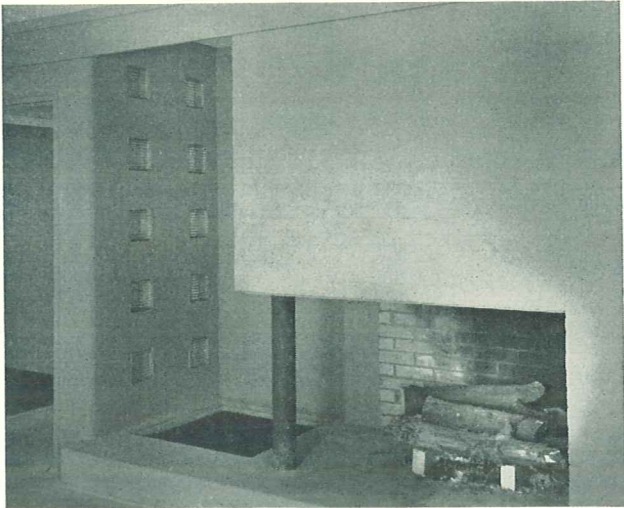
AMONG the novelties which have allured domestic designers in recent years is the projecting corner fireplace—particularly the type that affords a side view of the flame as well as a front view. Sometimes such a fireplace will offer two equal exposures of the fire at right angles to each other. More often one exposure is definitely front and a narrower exposure gives distinctly a side view.

The design which we present here is of the latter type. We also offer two photographs of corner fireplaces, for their value as suggestions. Neither is based on the design here shown. Other pictures of corner fireplaces will be found in the chapter on Scandinavian fireplaces, Page 49. Much of the inspiration for this type of design comes from Norway, Sweden and Denmark. However, the trend today is broader than any single region.

Pitfalls in Corner Practice—It is not hard to go wrong in planning and building a corner fireplace. The factor of cross draft is a critical point. It may carry smoke out into the room.

Another hazard has to do with the question of flue capacity. The Donley rule has always been a sectional area not less than one twelfth the size of the fireplace opening and this proportion is safe with correct construction in an ordinary masonry fireplace. However, some builders forget that the two faces of a corner fireplace mean an increase in the size of the opening.

Damper is Special—For the two reasons mentioned above, the flue capacity is calculated liberally and the damper has been made with an extra wide throat. This is the well known Donley Damper, executed in steel but modified for the purpose in view. It constitutes a new 500 damper series. The two right-hand digits in the size number refer to the length of the damper opening, corresponding to the effective width of the fireplace.



Fireplace at Avon Lake, Ohio.

Drawing and dimension table for Projecting Corner Fireplace, with profile of flame revealed.

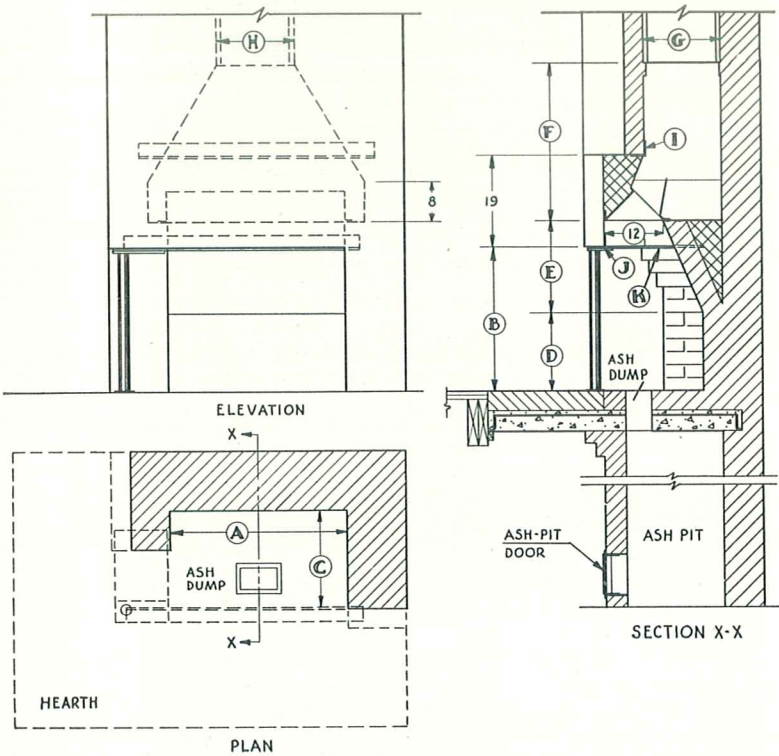
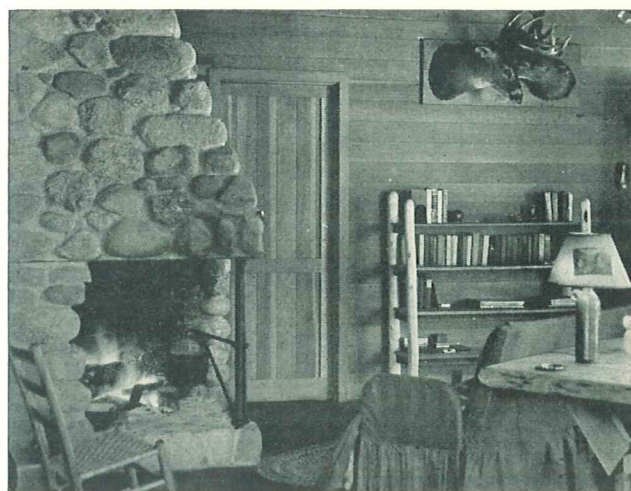


Table of Dimensions in Inches

						Old Flue Size		New Flue Size		Damper	Ash Dump	Ash-Pit Door	Upper Angle I	Angle, Plate (and Lintel) J K		Corner Post
A	B	C	D	E	F	G	H	G	H							
36	29	16	14	20	32	13 x 18		16 x 16		536	58	12 x 8	48	48	11 x 16	29
40	29	16	14	20	35	13 x 18		16 x 16		540	58	12 x 8	54	54	11 x 16	29
44	32	20	14	24	37	13 x 18		16 x 20		544	58	12 x 8	60	60	11 x 16	32
48	32	20	14	24	40	13 x 18		16 x 20		548	58	12 x 8	60	60	11 x 16	32

Support of Breast—The usual steel angle suffices for supporting the breast masonry above the main opening. The side opening is made by corbelling an abutment of greater thickness. Consequently a quarter inch steel plate is provided to support the overhang and extend backward beyond the corbel. Both angle and plate rest, at their extremities, on the cap of a two, three or four-inch column varying in height from 29 to 32 inches, but optional on special order. The angle, plate and column constitute an assembly which may be ordered as a unit.

Hearth Height Optional—The drawing indicates a hearth at floor level and shows the Donley Cantilever Hearth Assembly as a reinforcement and support. Some designers may prefer a raised hearth, since there is considerable precedent for raised hearths in a corner fireplace. In such a case, the fore-hearth outside the fireplace area is omitted and the whole structure lifted the desired number of inches by extending the walls of the ash-pit upward.



Above is corner fireplace of Scandinavian type built by W. H. Lawrence at Minoqua, Wis., in 1928 from plans furnished by the Donley Brothers Co.

Central Hearth Facilitated by Glass Screens

THE design for a two-way fireplace, on the ensuing page, will suggest to some architects the feasibility of a central fireplace for club lounges, hotel lobbies and other spacious premises open on three or four sides.

Where a central fireplace has previously been hazardous on account of cross drafts, the Donley Glass Fire Screen now gives assurance that flame and smoke can be controlled.

We offer no drawings for such a fireplace because any such central fireplace will tend to be a separate problem. In general, our suggestion would be for a raised hearth, supporting corner columns of masonry on which would rest the canopy-like smoke chamber and the flue. These might be made of masonry, but fabrication from metal certainly should be considered.

In the case of a detached club house, it would often be feasible to carry the chimney directly through the roof with little or no offset to the flue. Where the lobby or lounge is located in a structure of considerable height, the flue would generally be offset above the ceiling for a considerable distance. In such installations, an ornamental metal treatment would have certain appeal.

The function of the Donley Glass Screen would be to check cross drafts. Some of the screens, perhaps all of them, might remain open when desired but where a draft condition developed, control by closing some of the screen doors would be a simple matter and would not sacrifice any of the brightness, from the onlooker's viewpoint.

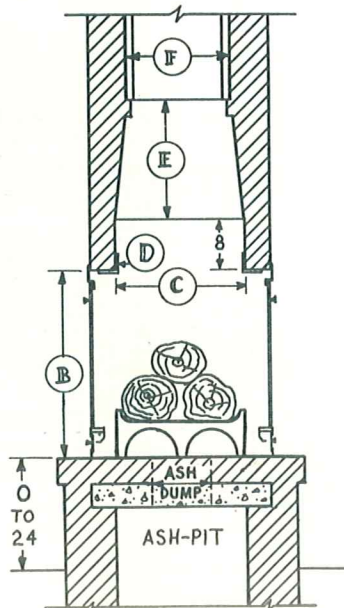
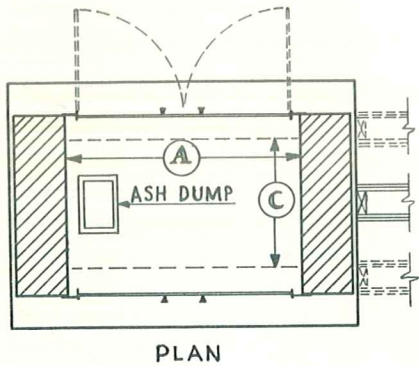
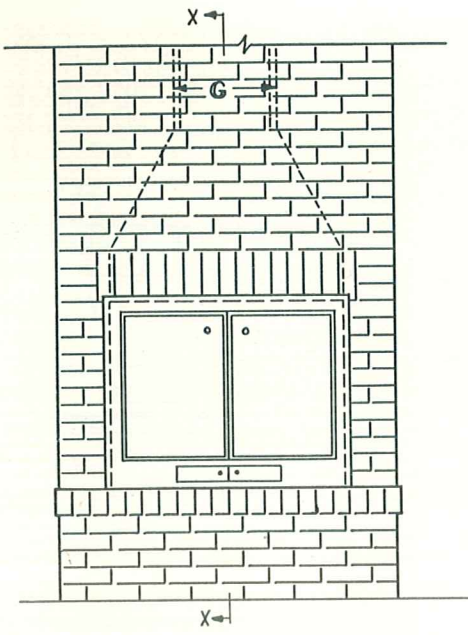
The number of sides to the hearth is, of course, within control of the architect. Many will see charm in a five-sided or six-sided hearth, although the four-sided hearth is simplest to construct. The Donley Brothers Co. will be pleased to co-operate in such a development. If screens of special size are required they can be provided.

Says the Donley Observer

*I watched a mason, old and gray,
Building a fireplace one day
And saw him throw the plans away,
As though they counted naught.
Another, scarce more than a boy,
I watched, who seized the plans with joy
And straightway hastened to employ
The principles they taught.*

*One trusted the experience
Of his own life. The other's sense
Told him that many lives
Had stored a wisdom in those plans
Far greater than the veteran's—
And from them he derives
Maturity in fireplace ways
Surpassing his brief length of days.*

SUCCESSFUL FIREPLACES



Design for a 2-Way Fireplace

NOW and then we discover an interest in a fireplace that will shed its radiance forward and backward—a two-way fireplace. Well, here it is.

Its typical use will be to provide a bright blaze for two adjoining rooms. The fire that cheers a living room will also warm the adjoining dining room or book room. Alcoves may share the heat of the room adjoining.

The hazard of a two-way fireplace is that drafts caused by the opening of doors, or otherwise, will blow smoke into a room. The reason why we present this design with confidence is that the new Donley Glass Fire Screen makes control of such cross drafts an easy matter. There may be many hours every day when glass screens will be open on one or both sides without nuisance. But at the least sign of such draft, closing of the screen on one side or the other will restore proper combustion. Notice that the flue is wide, without damper—the Table of Dimensions—ranging from 26 to 48 inches in width of opening. Old and new standards of flue dimensions are indicated in separate columns.

Table of Dimensions in Inches
(For Fireplace Open to Two Rooms, One Opening Behind the Other)

Width of Opening A	Height of Opening B	C	D	Funnel Height E	Flue Old F G	Flue New Size F G	Glass Screen
			3 x 3 Angle				
26	24	20	30	13	8½ x 13	12 x 12	No. 10
28	24	20	36	16	8½ x 13	12 x 12	10
30	29	20	36	13	13 x 13	12 x 16	30
32	29	20	42	16	13 x 13	12 x 16	30
36	29	20	42	19	13 x 18	16 x 16	40
42	29	20	48	24	13 x 18	16 x 16	50
42	32	24	48	24	13 x 18	16 x 16	50
			4 x 3				
48	32	24	54	27	18 x 18	16 x 20	60

SCANDINAVIAN TYPES OF FIREPLACES

AMONG devotees of domestic design, as well as the fine arts, there has lately been great interest in Scandinavian designing. Among other novelties, it has been discovered that Norway, Sweden and Denmark have fireplace traditions and practices strikingly different from those encountered elsewhere.

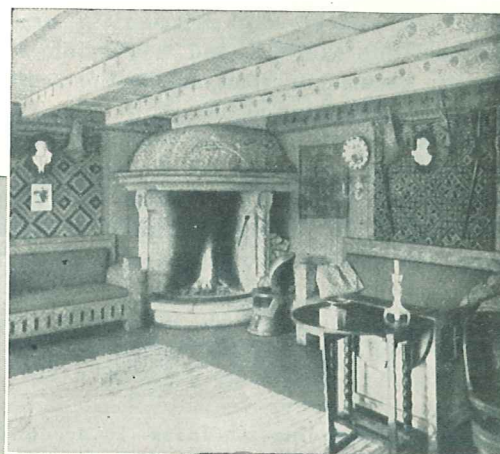
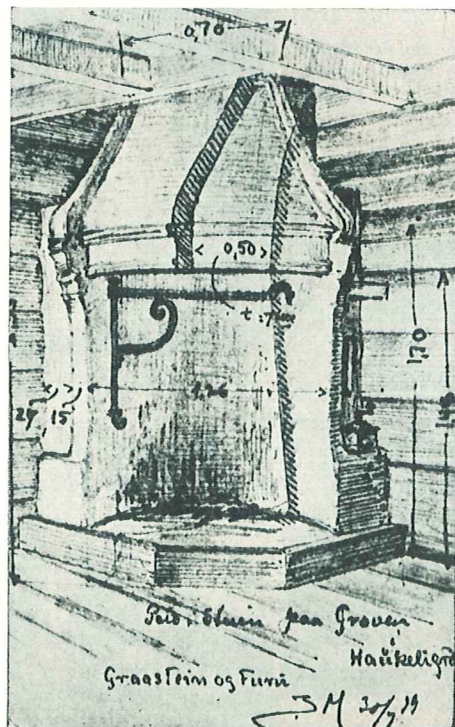
So if you are looking for something different in the realm of fireplace design, something that may influence the whole interior, study Scandinavian fireplace technique.

But study it judiciously with due regard to what we have tried to tell you about successful fireplace operation. Particularly what we have said about the projecting corner fireplace on Page 46.

For the original, peasant, fireplace on which all more refined planning has been based, was and is a corner fireplace. The Norwegian word for fireplace is "peis", pronounced "pace".

Constructing a Peis—The peasant builder first lays

Sketch of historic fireplace at Haukeligrand, Norway, with metric dimensions indicated and flue shown in phantom, indicating that custom sanctioned straight discharge of smoke, without smoke chamber.



Old and new in Scandinavian fireplaces. Above is a traditional type of ornate corner "peis". At the left a modern version in the apartment of a well known professional woman.

a deep hearth across the corner of his cottage, building it a foot or more in height. Then two equal back-walls are carried up against the walls of the cottage until this corner masonry attains the height planned for starting the canopy. This height, says Mason Hans Rask of Lakewood, Ohio, was usually governed by the length of an old, disused gun barrel, used for a corner support. This or some other iron column is erected at the corner of the hearth. Two heavy wooden beams are carried out at right angles to the wall, so as to meet over the column. These beams form the lintels for a heavy, stone canopy, cemented from whatever kind of stone may be available. It is narrowed and reaches the ceiling with opening just large enough for the throat of the chimney. The latter is carried through the roof and built to the desired height outside.

Mass of Stone is Heated—Two noticeable features of the peis are—(1) the large amount of stone employed in its construction and (2) the fact that the entire structure, excepting the upper part of the chimney, is within the walls of the dwelling. Persons reared in such surroundings lay stress on the heating of a mass of stone, which gives off heat even after the fire has died down.

One characteristic of Scandinavian fireplaces is the practice of leaning wood upright against the corner formed by the two walls. Meals were and are cooked before such fires, the high hearth forming a convenient shelf for the placing of utensils.

Question of Efficiency—There are many variations on this procedure in the more urbane models. Anyone who looks at pictures of Scandinavian fireplaces must be struck with the freedom of individual preference which they represent.

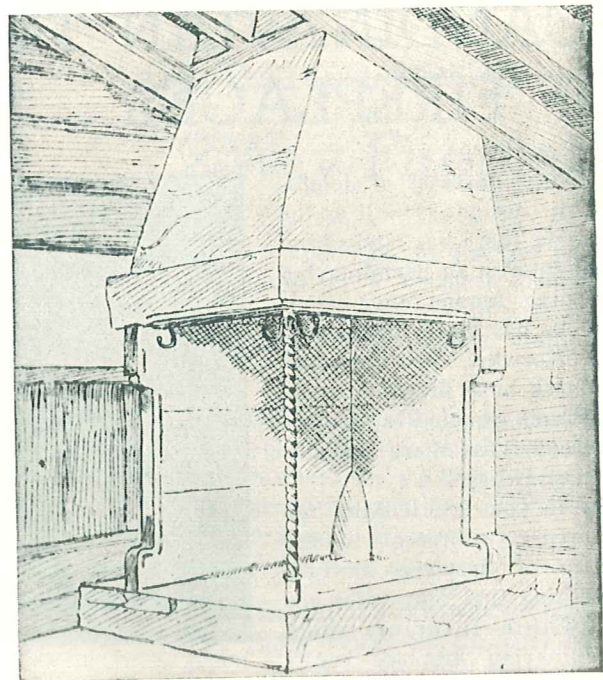
The off-hand judgment of such fireplaces must be

that they wasted a great deal of heat, with fires crowded into a corner and vented into a wide stack directly above. Mr. Rask admits this fault, but points to one compensating virtue.

The peis is all inside the building. As its masonry surfaces become heated, particularly the canopy, they give off heat generously, often for hours after the fire has died down. In some pictured instances, the peis is so far inside the dwelling that there is standing room between its back and the outer wall. This is a contrast to Anglo-American practice in which the masonry is often almost as much exposed outside the dwelling as on the inside.

Adapting Scandinavian Ideas—In accounting for the freedom and novelty of Scandinavian design, students tell us that Renaissance ideas, which proceeded from Italy in the middle ages, had only slight impact in Scandinavian lands—that their domestic designing proceeded directly from a simplified gothic to the modern or contemporary modes. There certainly is a similar dearth of any sign of Rumford influence in the interior planning of their fireplaces.

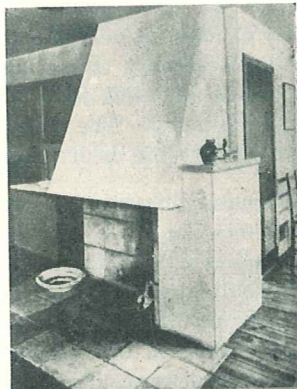
We would therefore urge adapters to go slow—to study what we have said about the projecting corner fireplace on Page 46. They should bear in mind that such features as the smoke shelf, smoke chamber and throat damper offer the only means known to check down-draft and retain satisfactory quantities of heat. The problem is that of adapting a throat and damper to the design evolved in your planning. Possibly a higher damper position, treating the slope of the canopy as a



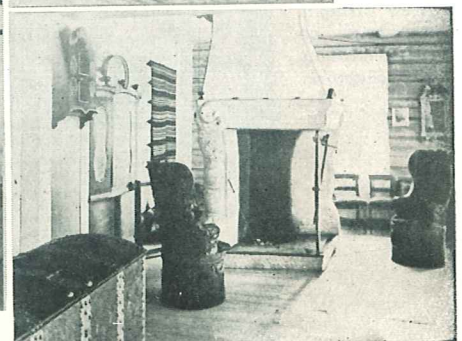
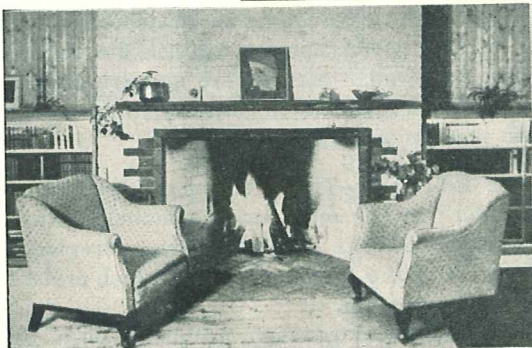
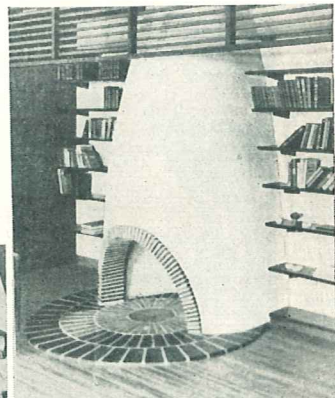
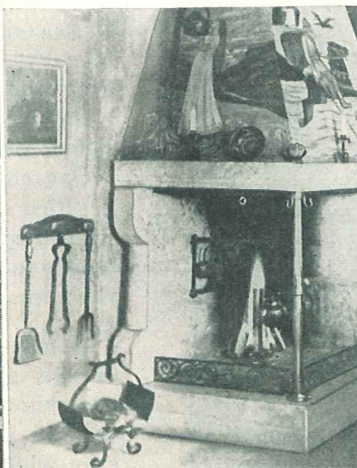
Typical Norwegian peis, slightly elaborated.

prolongation of the breast of the fireplace may offer some aid. At the same time, generous throat capacity is needed to correspond to the double opening. Our suggestion is the design on Page 46. Perhaps the adapter can design a better one, with due recognition of governing principles.

Picture below shows influence of the corner fireplace even in sidewall location. The walls of the fireplace meet to form a shallow angle at the back of the fireplace.



Various types of fireplaces encountered in Scandinavian homes, as revealed in magazines featuring home decoration and design.



A Plea for Peaceful Firesides

by the
Donley Observer

*The way men quarrel over fires
And swear and call each other liars
Is very strange to me.
It seems as though a little sense
Would prompt them to some tolerance
If they cannot agree.*

*I'm calm although my blood will boil
To think of the invested toil
Of busy saw and ax
All squandered in a measly flame
By one who seems to feel no shame
For methods sadly lax.*



*I've told my neighbor all along
His way of building fires is wrong,
But will he change his mind?
A being who is more perverse
Or one who starts a fire worse
I never hope to find!*

*My method when I build a fire
I learned quite early from my sire
And he in turn from his.
Procedure tested by the years
Has earned immunity from sneers
It's right because it is.*

*My neighbor has my full respect.
On subjects where he is correct
He wins my cheerful vote.
The stubborn figure that he makes
In standing up for his mistakes
Is all that gets my goat.*

*And so I must remark again
That in my dealings with such men
I try to be polite;
But do not think it very nice
To spurn my fireside advice,
When I am plainly right.*

HINTS ON TENDING AN OPEN FIRE

SOME people have an instinct for fire tending; some gain fire knowledge by slow experience. The older generation had fire duties from early youth, while the current crop of householders includes many who never acquired practice until a fuel shortage drove them to fire lighting duties.

For their benefit we may say that the 19th Century chore boy learned three stages in producing a fire, represented by the paper, the kindling wood and the actual fuel which might be coal or hard wood.

The match produced the flame; the paper spread it; the kindling held it and produced heat enough to ignite the fuel with a fire that would last.

The Question of Draft



Tight homes have made the draft question so acute of late that it is a good thing to determine whether there is a decided down-draft in the chimney before starting. Wet a finger and hold it under the fireplace throat. If it is cold on the upper side, the draft is coming down.

Opening a basement window an inch or two will often reverse the draft in a fireplace on floors above. A warm stack tends to reverse the draft. Some people crumple a paper, crowd it in the fireplace throat and light it. One should recognize that a flue warms gradually and not try to force a roaring flame in a minute—or the mantel front will be badly smoked.

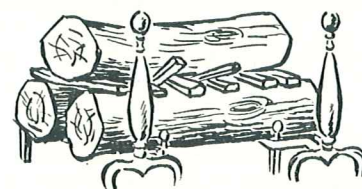
Your wood fire will not burn at its best until it has a bed of ashes beneath it. So one function of the pine kindling is to afford the start of a pile of glowing embers. If you build fires daily, leave some of yesterday's ashes, brushed together, as a foundation for today's bed of coals.

Laying the Fire

Much of the literature of New England must have been produced in front of log fires, if we draw inference from continual allusions to the fire and to fire lighting. There was (and is) a positive ritual of back-logs and fore-logs, of preferences in wood.

Let us see if we can reduce these dogmas to general principles. We have seen that a fire must (1) be lit, (2) be spread, (3) be held until general ignition takes place. The final stage of fire tending is to conserve it and keep the fuel from burning up too rapidly.

English Fire Laying Method



A method of laying a wood fire that is much used in England is called to our attention by an architectural friend in New York. Newspapers are first crumpled between the log rests. Then two logs are laid parallel over the paper. Kindling is laid across these logs, at intervals of about an inch, with a few sticks stuck downward between the logs into the paper. Then the third log is placed on top, parallel with the bottom logs. This arrangement creates a quick flame with good draft between the logs.

"I think," he writes, "that the English have devel-

SUCCESSFUL FIREPLACES

oped this system because (aside from their being a very civilized nation) wood is scarce and it is considered essential to have a nice, new laid fire blazing in the hall and guest room immediately a visitor arrives—as essential as their little courtesy of polishing shoes over night.”

Fuel Around the Flame



THE commonest error of neophytes with a fireplace is to try to burn one log of wood at a time. Even two logs are apt to snuff out. Three units in your wood fireplace represent a practical minimum.

Good fire builders recognize that the growing flame needs the protection of fuel around it—that it thrives best when twisting upward between faggots or chunks that continually obstruct it, continually force it to twist and turn.

Function of a Back Log

If your wood supply contains some pieces that are hard to burn, perhaps green—do not be disappointed. They make fine backlogs. The backlog lies against the back of the fireplace. You lean split pine or faggots against it in kindling your fire. It makes a counter-surface for livelier burning wood and helps to hold the body of the blaze forward where it will do the most good.

Wood that is fairly green can be burned after the fire is well under way, especially if there is a good bed of coals. It should be split finer than is necessary, with dry, seasoned wood.

Where Experts Differ

Some good fire builders lay their fires completely before applying a match, crumpling the paper and placing it at the bottom; then the kindling wood in loose array; then the solid fuel. If the job is done with care and discrimination, the flame will soon be creeping up through all parts of the mass.

There are others who light paper before they begin laying the sticks of kindling wood. They place each stick where it interrupts a tongue of flame, contriving small crevices to enclose it. Coal or wood fuel is added, a unit at a time. The man who does this loves to play with flame.

“Holding” a Wood Fire

Contrary to general belief, a wood fire can be held overnight—sometimes revived after a day or two of inattention. This is important to people who are heating homes with Heatsaver fireplaces and relying chiefly on a wood supply.

Success is wholly a matter of a bed of ashes and embers protecting the partially burned wood from drafts and conserving its heat.

Building a Coal Fire

Coal is a more stable fuel than wood and requires less attention, although harder to hold overnight in an open basket. It is kindled in much the same manner as wood. If you have a good “grate” coal, the blaze will be well established in 15 minutes, but it should not be crowded. The flue should be warmed gradually and each piece of coal placed carefully until a lively coal flame has been achieved.

Choice of Fireplace Coal



Cannel coal is in the greatest demand as a fireplace coal. It is the next thing to an oil-bearing shale, ignites quickly, sputters a good deal and makes a lot of ash. A fire screen is good caution when burning cannel but a screen diminishes heat and mars enjoyment.

Kentucky bituminous coals have earned a fine reputation, burning quietly and lastingly. There are many grades of bituminous coals that burn acceptably in open fires. Coal of the Pocahontas type tends to coke and mat together, while the loss in slack is considerable.

There is such a thing as a hard coal grate. Coke can be burned in a fireplace if necessary. Neither is preferred in the typical fire basket. Both require to be enclosed on four sides with good draft from below, deep beds of coals being best.

Kind of Wood to Burn

Wood merchants in central-eastern localities report preference for beech, birch, hickory, apple and maple. Many other woods burn acceptably. Oak is excellent fuel; pine and other evergreen rather too free burning for other than kindling.

Apple and hickory give pleasant aroma. Hickory is preyed upon by carpenter bugs and their offspring may infest the premises where it is used. Apple is less abundant than it would be if orchardists replaced trees past bearing. Birch dresses the fireplace handsomely, but burns rather too fast. Beech gives a fine, steady, lasting flame.

The writer lacks data on many woods which must be much employed for fuel in southern and western localities. Perhaps readers will help him out. He does recall his morning wrestles with California redwood as kindling in starting morning fires in a printing office at Palo Alto about 1902—leading to the conclusion that the coal could just as well be lighted from the paper.

Synthetic Wood

Large lumber interests are back of the synthetic logs, now offered in packaged form. They consist of sawdust and chips bonded together under pressure. The reputation of their manufacturers is pretty good assurance that they make acceptable fuel.

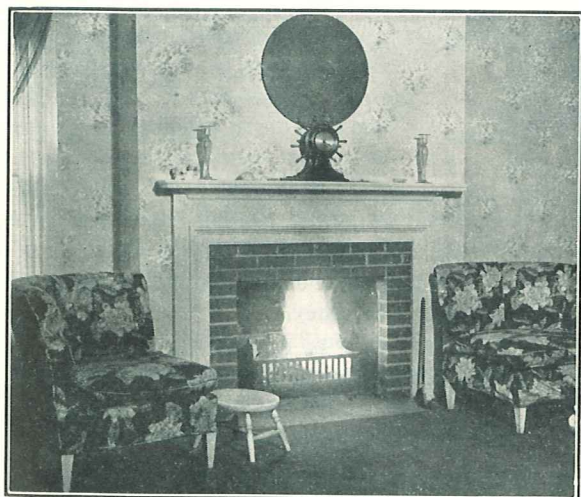
Igniting Devices

To many city dwellers, the question of kindling wood is quite as acute as that of getting firewood. To them the mechanical lighting device makes an appeal.

Such a device is shown on Page 62. Sometimes they are called Cape Cod Lighters. A device with a metal handle and a head of absorbent fireclay rests in a small kettle of kerosene. Removed and lighted, it acts as a wick and ignites the coal or wood used as fuel. The absorbent fireclay becomes heated in the process and if the fuel does not immediately ignite, do not immerse lighter in the oil immediately or oil may explode.

Gas igniters usually consist of sections of pipe, enclosed at the end and perforated to emit jets of gas. It usually has a flexible connection with the supply line and is laid under or on the log rest for lighting.

Such devices do not build beds of embers as does wooden kindling. If ashes are left on the hearth, they tend to clog the gas outlets. Trying to light logs without contact with ashes tends to be a slow process. Gas lighters are the one resource for many, but they often present difficulties.



Heatsaver Fireplace in home owned by Emory Pryor, at Chagrin Falls, Ohio.

Use of Fire Tools

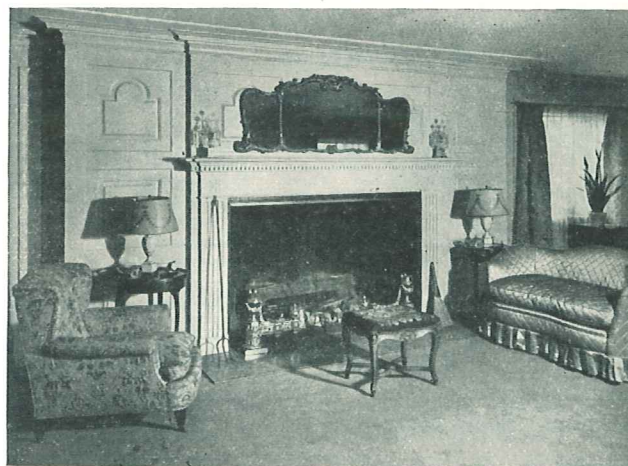
It is a sign of bad fire tending to lift a coal hod and throw a large part of its contents on the flame. Better to place each chunk where needed with the tongs, or to lift out moderate sized shovelfuls with the fire shovel.

The poker should be used to rouse the flame by opening new draft passages among the embers and by rearranging the fuel. In the case of wood fires, there is repeated need to bring the unburned ends of logs into the center of the fire, and a poker, or tongs, makes easy work of this task. A brush is useful in cleaning the hearth or keeping the ashes in a neat pile. Some people like to use a bellows as a persuader for a lagging flame.

Operation of Damper

Make sure that the damper is wide open before you light your fire. Many fireplaces are operated with dampers constantly open. Dampers do not have to be constantly opened and closed in order to be of great value in promoting smooth discharge of smoke and arresting down-draft.

When the fire builder has mastered other features of fireplace operation, he can begin experimenting to see how much his damper opening can be cut down, with his fuel, and save heat while discharging all the smoke. When only a bed of glowing coal remains, the damper can be brought nearest to a closed position. But be sure to open it before refueling with smoke-producing fuel.



Living room fireplace, Ripplestone estate of Kenneth F. Allen at Gates Mills, Ohio.

The Donley Observer Says . . .

*Among mankind, a dirty face
Is justly counted a disgrace.
So, likewise, with a fireplace,
It shows a woeful lack
Of diligent parental skill
If it has been brought up so ill
That it is smudged and black.*

(Occasionally the black face is an accident—Damper closed.)

*The being that is right inside
Will never seek its face to hide,
But take a just and joyous pride
In courting close inspection.
So look behind the outer wall
When fireplaces wear a pall
Of sootiest defection.*

SUCCESSFUL FIREPLACES

FIREPLACE DIFFICULTIES

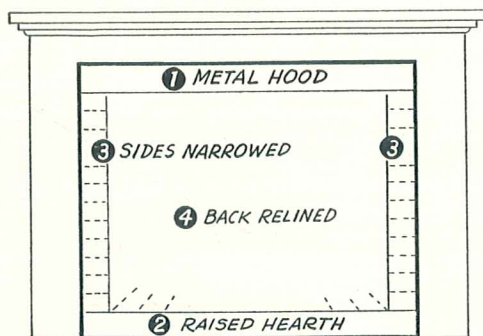
Their Prevention, Diagnosis and Treatment

PROPERLY constructed fireplaces burn warmly, cleanly, safely. Those owners, who "guess all fireplaces smoke," are making the wrong guess. Yet faulty construction is common enough so that the Donley Brothers Co. is being constantly consulted, by letter or otherwise, as to the causes of troubles with fireplaces. Investigation nearly always reveals some basic fault in planning, or some mistake of execution.

Fire Hazards—Fire resisting material should always be installed between the chimney and wood members. Flue lining, properly cemented, is an excellent source of fire protection and its use is directed by most building codes.

Dummy Fireplaces Dangerous—Besides imparting an atmosphere of fraud, the dummy fireplace is a source of positive danger. Sometime, some day, somebody will try to build a fire in it. The minimum result is a house full of smoke—the maximum is need for a new house.

Causes of Smokiness—The great majority of complaints about fireplace operation are based on smoky operation. Here are some of the conditions and remedies that relate to smokiness.

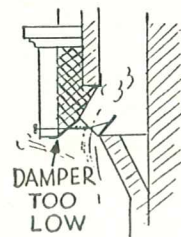


Four ways of reducing fireplace opening

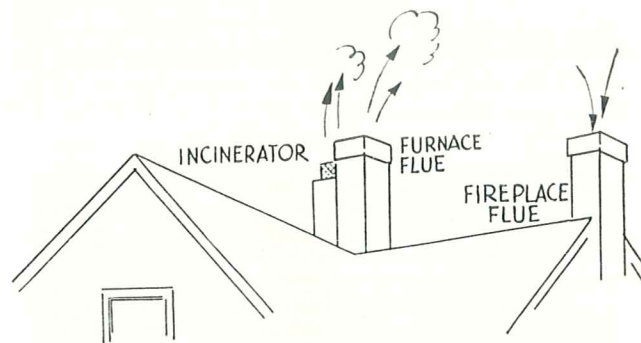
Fireplace Too Large for Flue—The flue area should be not less than $\frac{1}{2}$ of the area of the fireplace opening. Where too small to carry off products of combustion, remedy may be found in reducing the size of the opening. Some corrective workers (1) install a shal-

low hood of metal beneath the fireplace breast. This also helps in cases where the damper position is too low. Other ways of reducing the opening are (2) to raise the hearth by laying one or two courses of brick over the old hearth. Where drastic reduction is needed (3) narrow the sides of the opening and/or (4) reline the back.

Damper Too Low—Smokiness often ensues because the damper has been installed with its flange at the lower level of the front wall. The remedy is to take out brick work, raise the damper to a position four to six inches above the opening and re-align the rear wall to conform with the higher position.



Lack of Combustion Air—Recent innovations in caulking and weather stripping have made homes so tight that there are no air inlets to provide air of oxygen and for draft, such as every fire needs. The



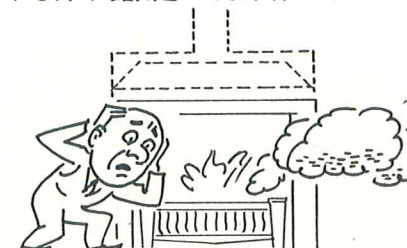
result is that the unlighted fireplace becomes an inlet for outdoor air. If the furnace, the cooking range and incinerator are lighted, there is a steady current of air down the fireplace chimney.

Then if the fireplace is lighted, the draft down the chimney is pretty sure to drive smoke out into the room. We have repeatedly investigated complaints of smoky fireplaces which proved to be due to lack of

DON'T MAKE FLUE OPENING TOO SMALL FOR SIZE OF FIREPLACE OPENING

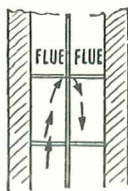


DON'T LEAVE OUT SMOKE CHAMBER



ventilation for the interior as a whole. Often opening a basement window an inch or two would cause the fire to burn brightly. The only answer to this type of fireplace trouble is ventilation—not merely for the fireplace, but for the furnace, incinerator, range and for respiration for the family. It is a poor sort of progress that excludes air from interiors where people are supposed to live.

Leakage From Flue to Flue—Sometimes smoke will issue from a fireplace that has no fire in it. Search will show that flues have been placed side by side in the same stack without cementing the joints between units of flue lining. If a furnace fire is burning briskly, there is apt to be down-draft in the fireplace flue, for reasons stated. Smoke will be sucked across through the uncemented flue lining joints and descend—coming out of the fireplace. The remedy is to tear out the chimney and join linings properly. Staggering units of the lining is a help.

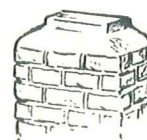
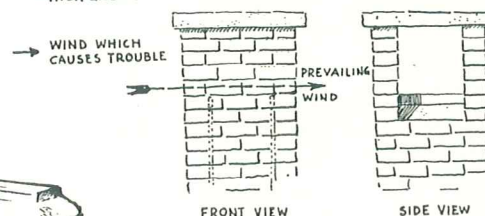
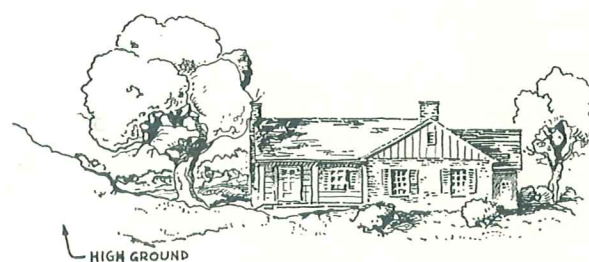


Use of Perforated Brick—Where workmanship is good, there can be no objection to the use of perforated brick in chimney work. Where a job is carelessly done, the fact that brick is perforated may account for the emission of smoke at a point that cannot otherwise be accounted for. The fault, in such cases, is with the workmanship, not the material.

Leakage Impairs Draft—Where flue joints are uncemented and mortar in surrounding brick work disintegrates, there is often a leakage of air into the chimney. This prevents the chimney from exercising the draft possibilities which its height would otherwise assure. The case is similar to that of trying to smoke a cigarette with a hole in the paper. Thorough pointing of the brick work usually effects a cure.

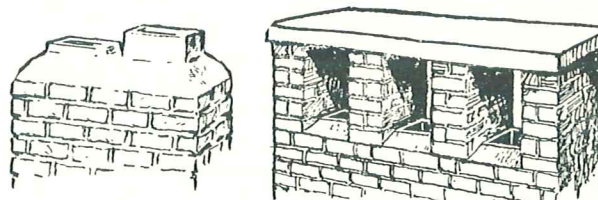


Wind Deflected Down Chimney—The surroundings of a home may have a marked bearing on fireplace performance. If located at the foot of a bluff or hill, or if there are high trees close at hand, the result may



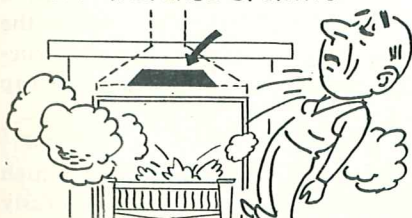
be to deflect wind down the chimney in heavy gusts. A near-by high building has been known to produce the same effect. The detail of a hooded chimney below the sketch of a house shows a common and efficient way of dealing with this difficulty. It may also be mentioned that carrying the flue lining a few inches above the brick work, with a bevel of cement around it, is a recognized means of promoting clean exit of smoke from the flue. It minimizes wind eddies. The cement bevel also causes moisture to drain from the top and prevents frost troubles between linings and masonry.

"Pouring" From Flue to Flue—We have spoken of the case where down-draft from interior suction pulls smoke from the top of one flue down an adjoining flue. Related to this is the case where vertical wind



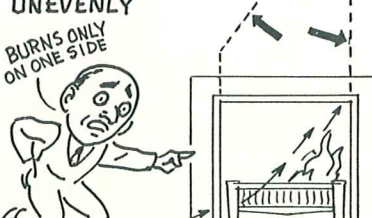
currents force smoke down an inactive flue as it emerges from an adjoining flue. One way to treat this is to carry the flues to different heights above the masonry. In other cases, multiple flues are capped, as shown. Note the bevel of cement which helps drainage and promotes clean emission of smoke.

DON'T USE DAMPER SHORTER THAN FIREPLACE OPENING



DON'T SLOPE SIDES OF SMOKE CHAMBER UNEVENLY

BURNS ONLY ON ONE SIDE

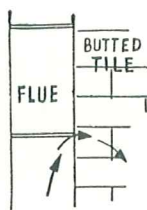


DON'T FORGET THE DAMPER

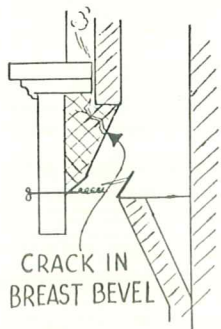


SUCCESSFUL FIREPLACES

Cases of Flue Leakage—Various cases have come to our attention where smoke or odors would pervade a home through faulty chimney construction. One type of difficulty comes from the butting of open tile against a flue. Unless the joint of the flue is tight and remains so, it will emit smoke through the hollow tile that may issue at a point remote from the fireplace and prompt a call for the fire department.

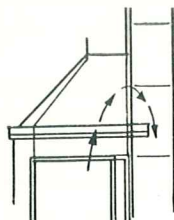


The smell of gas from a fireplace generally means that there is cross leakage from flue to flue, one of them being the one that vents some gas-burning device.



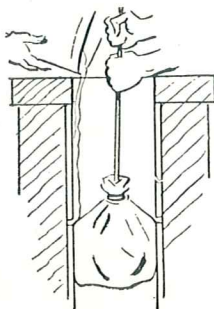
In one instance reported, there was a crack in the bevel of cement back of the chimney breast. Since the front of the chimney was furred and lathed for plastering, the smoke was discharged between the plaster and the chimney masonry. It issued from cracks in the second story woodwork.

Careless masons have been known to bring a flue from a lower floor up through the floor and have the flue lining form one side of the fireplace. Leakage of smoke and faulty draft are likely to result—if not at once, within a few years. Correction involves tearing out the fireplace and building a proper smoke chamber.



Proper Joint Practice—The safeguards against conditions cited are fourfold—(1) Careful cementing of flue joints. Space between flue lining and brick work being filled with mortar. (2) Staggering of joints in adjoining flues, or at least four inches of well cemented brick between flues. (3) Surrounding brick-work properly laid and joined.

Method of Sealing Joints—A method of closing uncemented flue joints without tearing out the chimney has been used with success in some instances. It involves the use of a traveling plug and fairly thin grout. As a plug, a canvas bag is sometimes employed, stuffed with rags or papers and weighted with bricks in the bottom. When lowered into a flue from the top, by means of a line or pole, it should fit fairly tight, but not too tight for motion. The method of use is to stop it just below the level of each flue joint and pour grout down the flue. When stopped



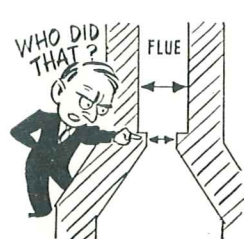
by the plug, the grout flows into the open joint. After the joint appears filled, the plug may be lifted and lowered a few times, producing a swabbing effect. Then it is lowered to the succeeding joint and the operation repeated.

This operation should be carried out with careful eye to conditions in the fireplace below. If too much grout is passing the plug, it may pile up on the smoke shelf, drain into the fireplace and deface it, or, in hardening, may impair the working of the damper.

Double Use of Fireplace Flue—Where kitchen stove, furnace or other appliance uses the same flue as the fireplace, there is always a liability of smoking and draft disturbances. Each fireplace should have its own flue.

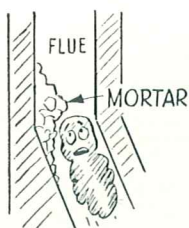
Flue Off Center—The flue should always take off from the center of the smoke chamber and if a slope is necessary, it should occur above that point. Where the flue takes off from one side, it produces uneven draft. Smoke travels sluggishly from the farther side of the fire area and is prone to eddy out into the room. Correction calls for rebuilding the smoke chamber and realignment of the flue.

Pipe Projecting Into Flue—Men who install gas appliances are often extremely careless in carrying their vent pipes to almost any convenient flue, breaking in and sticking the metal pipe any distance into the flue that will avoid the nuisance of cutting it off. In many cases a pipe will pass clear through the flue and butt against the opposite wall. The venting of a gas appliance into a fireplace flue is questionable under any circumstances. Where any flue is entered, care must be taken to carry the vent no further than through the flue lining, cementing it in place. If broken pieces of flue lining are allowed to fall down the flue, an added danger of obstruction ensues. Vents from soil pipes, in many cases, have become obstructions in the same way.



Choking at Base of Flue—The upper course of brick in the smoke chamber should offset just enough to afford support for the flue lining, without impinging on the area of the opening. Frequently it is found that they have been set in such a way as to reduce the area of the flue. The only remedy involves removing the obstruction. The same effect might be produced by a cap that chokes the outlet.

Flue Choked by Debris—The commonest form which this difficulty takes is the deposit of mortar, carelessly

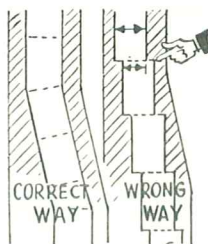


dropped down the chimney during construction. If the flue is straight, it generally lodges on the smoke shelf and may impede the working of the damper. This condition may be corrected, in case of the Donley Damper, by disconnecting the control device, lifting

out the valve plate and removing the debris through the fireplace throat. In case there are turns in the flue, debris may lodge at the angle and such debris is sometimes found to include broken pieces of brick and flue tile. In some instances such obstructions can be dislodged from above by a pole or weighted line and debris removed from the smoke shelf. More often it involves tearing out.

Flue Lining Out of Line—

Sometimes careless masons fail to set flue lining with due alignment, leaving uneven joints, prone to cause leakage of smoke and fumes. In some instances where a slight change of direction in the flue is necessary, it is done—not by sloping the flue in the proper manner—but by successive offsets of vertical lining.



One Fireplace Below Another—Two fairly common mistakes in building a recreation room fireplace below a living room fireplace are—(1) Using one flue for both. (2) Taking off the flue for the lower fireplace at the side of smoke chamber, in order to carry it around the fireplace above. The lower fireplace should be offset sufficiently so that a flue from the lower fireplace by-passes the upper one and reaches the chimney stack by a slope of not more than 7 inches to the foot. See design on Page 17.



Ash-Pit Clogged—Difficulty sometimes encountered in removing ashes from ash-pits points to the need of making pits with uniform sectional areas and smooth walls. When pits or chutes are offset in passing a fireplace on a lower floor, all possible care must be taken to avoid roughness or sharp changes

of direction. Wall leakage, particularly in the basement wall, permits water to seep in and convert ashes into a soaked and tightly packed mass. The ash-pit door should be centered at the base of the pit and be large enough to afford access, by poker, in freeing clogged masses near the base. More refractory conditions may call for tearing out masonry and treating obstructions.

Moisture and Frost Troubles—Because chimneys are subject to contrast of inner and outer temperatures, there is more tendency for mortar to crack and disintegrate than in wall masonry. Natural gas fumes, which form a vapor, may escape through uncemented flue joints and augment the effect of moisture.



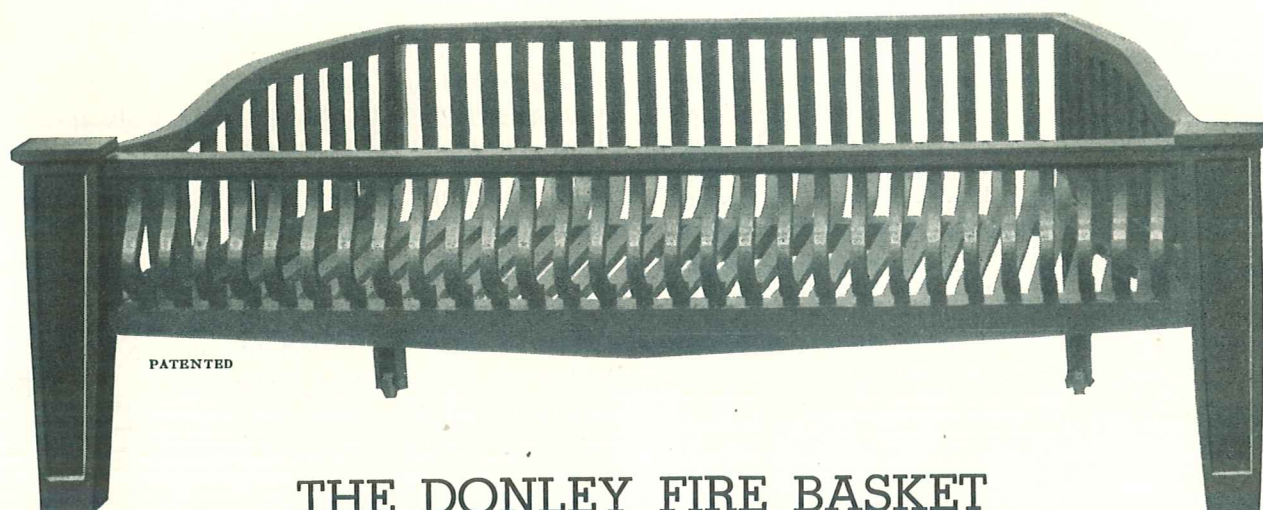
Moisture in masonry is always a menace, because it freezes in cold weather and causes disintegration of mortar and spalling of the brick work. The greatest source of danger is the chimney top. There should be a smooth, impervious bevel of cement at the top, closing the joint between brick work and lining. If this cracks and admits moisture between lining and brick work, disintegration is rapid. The chimney becomes a menace because high winds may topple it down. Joint leakage is a lesser evil.

Chimneys should be kept under observation for the need of pointing and their tops examined periodically. Mastic pointing is more effective than cement pointing because mastic adheres better and repels water. Donley Caulking Compound makes an excellent pointing material.

Troubles Generally Avoidable—With comparatively rare exceptions, the troubles that owners suffer from their fireplaces are easily avoidable. It costs little, if anything, more to build a fireplace correctly than to build it badly. Against the varied array of difficulties we have mentioned must be counted the millions of fireplaces that operate to produce uniform warmth, cheer and contentment. Corrective work often involves considerable tearing out, but it is preferable to long endurance of an unsatisfactory fireplace.



SUCCESSFUL FIREPLACES



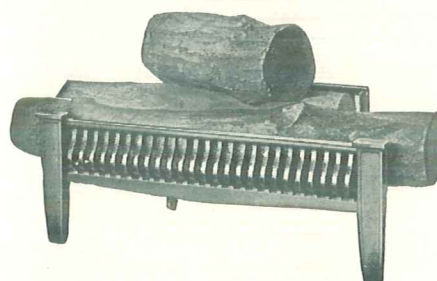
THE DONLEY FIRE BASKET

Splayed Sides for Masonry Fireplaces

This simple and graceful fire basket is shaped to fit a fireplace with sides properly splayed, as indicated in the Donley construction drawings, shown on Page 12. It is cast from the best quality of stove plate cast iron and has a record for enduring severe service for many years.

The illustration at the right shows the manner in which the ends may be removed for burning firewood. They slip out easily when lifted and go back in place securely when coal is the fuel. This is valuable when wood is an occasional fuel. For regular wood burning, the Donley Log Rest or a stout set of andirons is recommended.

The advantages of a fireplace with splayed sides is explained in the chapter on Fireplace Construction, Page 15. Such a fireplace should by all means have a fire basket that conforms to its hearth plan. Widely used, the Donley Fire Basket has earned the approval of thousands of users.



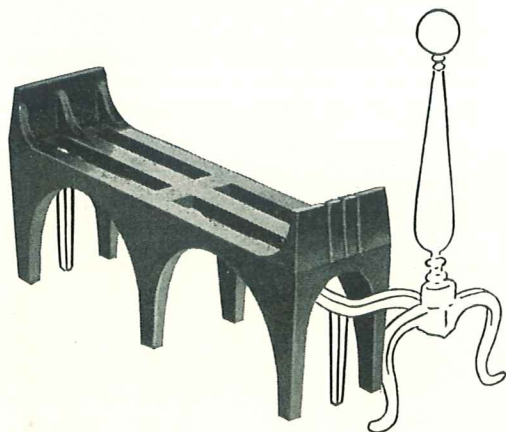
This illustration shows how the ends of the Donley Fire Basket can be removed for burning logs longer than the basket itself. These ends are easy to remove or to set in place.

For MASONRY Fireplaces

Front Order by this No.	Back	Depth	Shipping Weight	Suitable for Fireplaces With Opening Widths of
24"	12½"	15"	42 lbs.	26" to 28"
28"	16½"	15"	46 "	30" to 34"
30"	18½"	15"	48 "	32" to 36"
34"	22½"	15"	54 "	36" to 43"
40"	28½"	15"	70 "	44" to 60"
57"	45½"	15"	110 "	60" to 72"

Height at back, 12". Height at front, 10½". Clearance for andirons under front, 5".

STURDY LOG REST

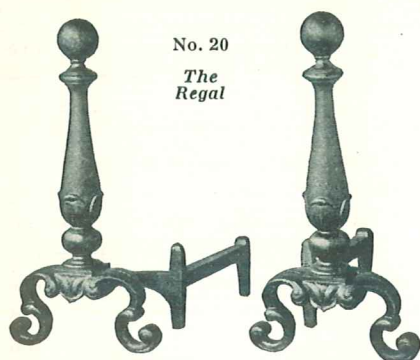


A pair of these heavy durable Log Rests are a boon to the owner who burns wood exclusively in his fireplace. Designed for heavy duty, they last a lifetime where loads of wood are heavy and heat often is intense. Ordinarily two Log Rests suffice, but where the fireplace is spacious and only short wood available, three or four are sometimes used. When ornamental value of an andiron is desired, the shank of the andiron can be slipped underneath the log rest as shown at the left. When used with outdoor fireplaces, the log rest will support conveniently a grid or grille for cooking. They are made in two lengths, 16 inches and 20 inches, weighing respectively 41 and 48 pounds. The supporting surface is 5½ inches high and 4¾ inches wide.

Graceful, Dignified Andirons

Except those models designated as cast brass, all Donley Andirons are cast from high grade gray iron. On cast brass models, the fuel supporting shanks are of gray iron.

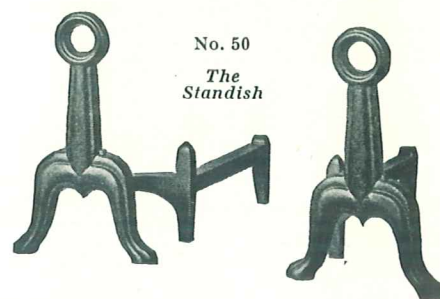
Avoiding eccentricities, Donley Andirons are designed to gratify a variety of tastes and co-ordinate with other elements in the fireplace picture. For description of finishes, see next page. Order by number listed in table.



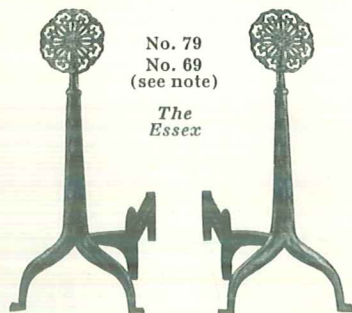
No. 20
The Regal



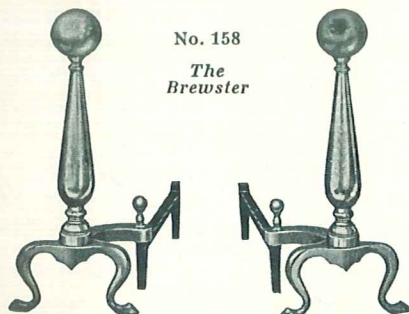
No. 30
The Windsor



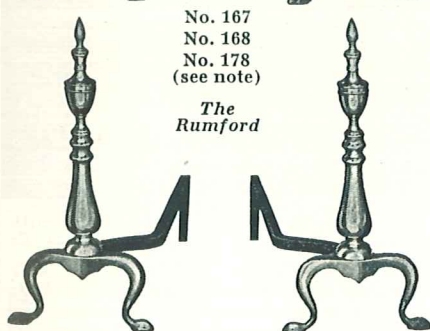
No. 50
The Standish



No. 79
No. 69
(see note)
The Essex



No. 158
The Brewster



No. 167
No. 168
No. 178
(see note)
The Rumford



No. 197
No. 187
(see note)
The Roanoke



No. 217
No. 207
(see note)
The Mt. Vernon



No. 220
The Craftsman

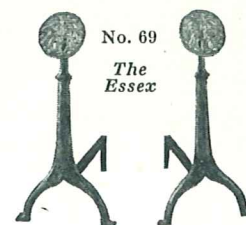
MATERIALS AND FINISHES

See description of finishes on next page

Name	Height, Inches	MATERIALS AND FINISHES				
		Cast Iron, Black	Cast Iron, Brass Plated	Cast Iron, Black, Cast Brass Top	Cast Brass	Swedish Iron, Brass Plated Top
		No.	No.	No.	No.	No.
Regal	22	20	21	..	..	..
Windsor . . .	18½	30	31	..	..	..
Standish ..	14½	50	51	..	..	..
Essex	18½	..	..	..	..	69
"	24½	..	..	..	..	79
Brewster ..	19	..	..	..	158	..
Rumford ..	16	..	..	..	167	..
" ..	18	..	..	..	168	..
" ..	21	..	..	..	178	..
Roanoke ..	16½	..	..	187	..	..
" ..	20½	..	..	197	..	..
Mt. Vernon ..	20½	..	..	207	..	..
" ..	23½	..	..	217	..	..
Craftsman	17	220	221	..	..	..

Andiron Shanks

All andirons are regularly furnished with the curved shank as shown in the various illustrations. The straight shank shown on andiron at the right is optional on the Regal, Sentinel, Windsor, Standish and Essex models. Straight shanks are shorter, cost less than the curved shank and are sometimes preferred with log rests or fireplace basket. Length, 13 inches. Curved shanks are supplied unless otherwise specified.



No. 69
The Essex
With straight shanks

Note: Similar, but different dimensions

SUCCESSFUL FIREPLACES

USEFUL, APPROPRIATE FIRESETS

A good fireset with shovel, poker, tongs and hearth brush makes fire tending easier and more enjoyable. An attractive fireset appropriate to the other fireplace furnishings adds much to the appearance of the room. Donley Firesets are designed to that end—useful, attractive and harmonizing with other Donley Fireplace equipment.

Firesets in the 240, 250 and 270 series are carefully designed for pleasing appearance and lasting decoration. They are also strongly made to give a lifetime of service. The tools are forged from $\frac{1}{8}$ " steel with handles of cast brass or iron. The picture here shows the forged steel claw on the tongs, giving a non-skid grip which, we believe, is superior to any other made for handling of fireplace fuel. The tools are set in a stand having an attractive base of cast iron with flange to prevent scattering of ashes. Graceful retaining horns at top securely hold the tools in place. Sets are available in a variety of pleasing finishes, and the

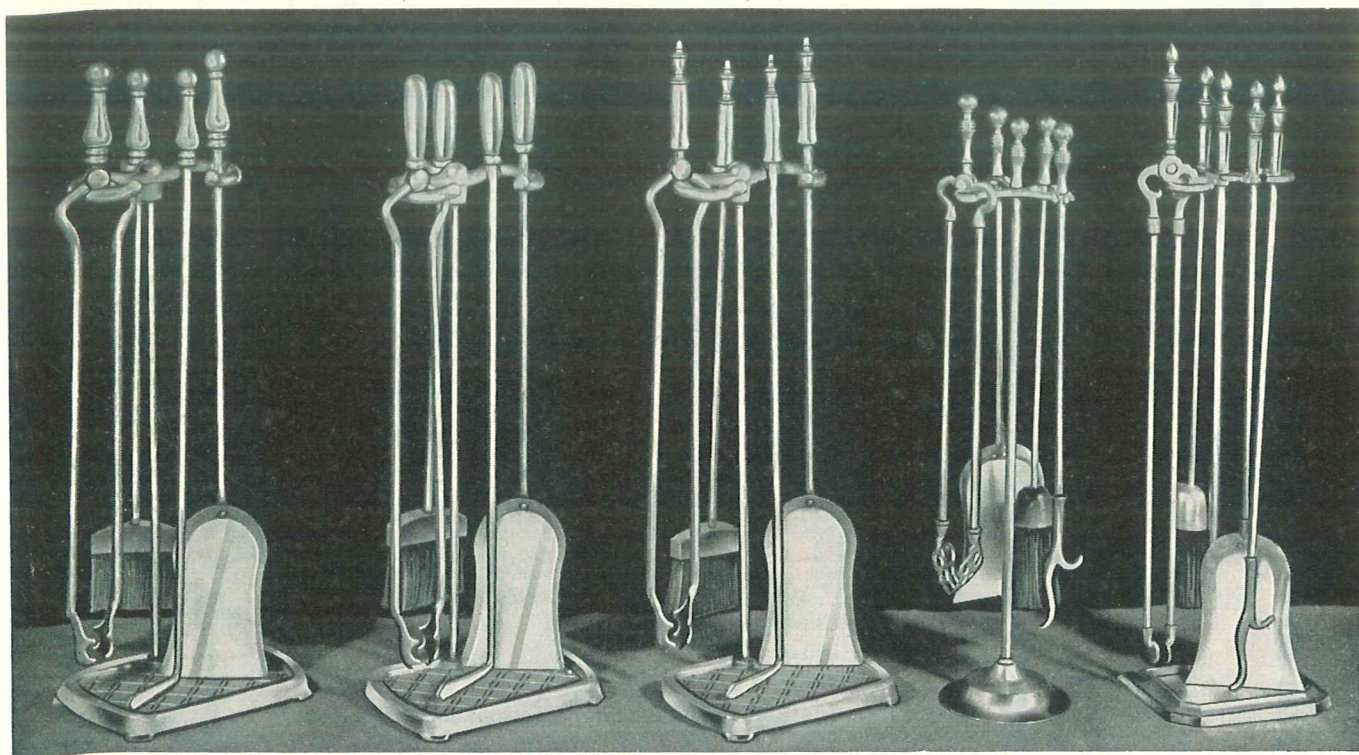


Close-up of forged steel claw on tongs of 240, 250 and 270 series. Grips fuel firmly.

designs are appropriate to the various Donley Andirons. Height, 30" over all, shipping weight, 18 pounds per set. See table below for appropriate andirons.

Models 212-B and 218-B are less sturdy, being made primarily of brass. They are more delicate of line and construction. They have the same number of tools, the fifth handle being on the center upright of the set.

Two other sets not illustrated are: Model 210-B with flat base the same as Model 212-B, but having ball top handles, and Model 220-B with canopy base the same as Model 218-B but with urn type handles. Models 210-B and 212-B are 29 inches high, shipping weight 16 pounds; 218-B and 220-B are 27 inches high, shipping weight 10 pounds.



Model 240 series.

Model 270 series.

Model 250 series

See table below for various finishes available.

No. 218-B with ball handles as illustrated.
No. 220-B same except for urn handles.

No. 212-B with urn handles as illustrated.
No. 210-B same except for ball handles.

Description of Finishes of Andirons, Firesets and Fireplace Furnishings

Art Black—A semi-gloss, black finish that is rust and heat-resisting.

Brass—Cast, spun or extruded yellow brass, polished and lacquered.

Brass Plated—An electroplated finish of yellow brass on cast iron or steel, polished and lacquered. Has the beauty of brass plus the greater strength of steel.

Swedish Iron—A gray iron finish lacquered for preservation of color and protection against rust.

FIRESET MATERIALS AND FINISHES			APPROPRIATE ANDIRONS TO USE WITH FIRESETS LISTED AT LEFT
Handles	Tools	Fireset No.	
Cast Iron, Black	Steel, Black	240	20, 50, 187, 197 10, 20, 207, 217 Any Andiron with similar finish
		250	
		270	
Solid Brass	Steel, Black	247	21, 51, 158 31, 38, 51, 167, 168, 178, 207, 217 Any Andiron with similar finish
		257	
		277	
Solid Brass	Steel, Brass Plated	248	28, 51, 158, 187, 197 31, 38, 51, 167, 168, 178, 207, 217 Any Andiron with similar finish
		258	
		278	
Cast Iron, Hammered Swedish	Steel, Swedish	279	69, 79

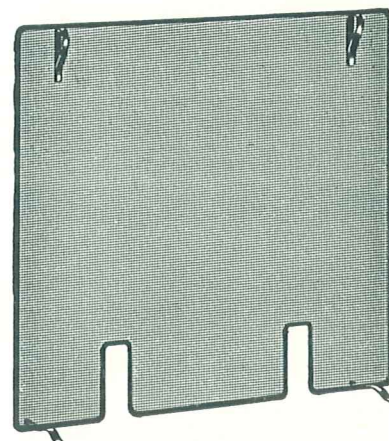
FIREPLACE SCREENS STOP FLYING SPARKS

Donley Fire Screens are made in three types—the flat type that fits close to the fireplace front, those with a wide central panel and two wing panels, multiple fold models (4 and 5 folds). Each is substantial, attractive and built to last—brass ornament, as on illustration of type No. 2, is available at slight extra cost.

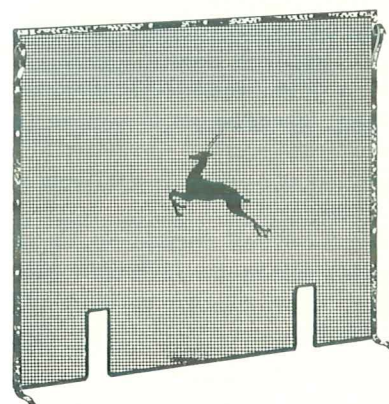
Flat Type—These one-piece screens set close to the fireplace front. Stock sizes are made to overlap standard size openings approximately one inch at sides and top. They are made with strong steel wire mesh and have openings at the bottom for use with andirons. Sizes: 28" wide by 25" high, 32x29, 32x31, 36x29, 38x31, and 44x31. Shipping weights, 18 to 22 pounds. Other sizes will be made up on special order. In ordering special screens, state size of opening—screens will be made so as to overlap opening one inch at top and at each side.

Screen type No. 1 has a rod frame with supporting feet welded in place. Neat, substantial black handles regularly furnished or, at small cost, handles are finished in solid brass or antique brass to match the furnishings.

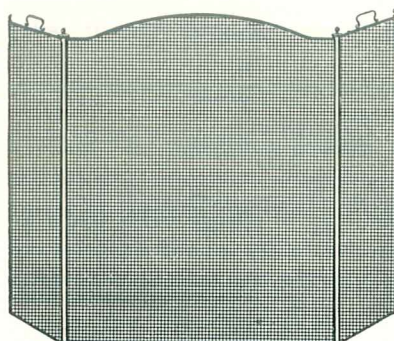
Type No. 2 has a special design, strongly riveted frame with smooth edges. Top and sides of frame are finished in black, hammered Swedish (gray steel) or polished brass. Handles and legs are finished in black, polished brass or antique brass.



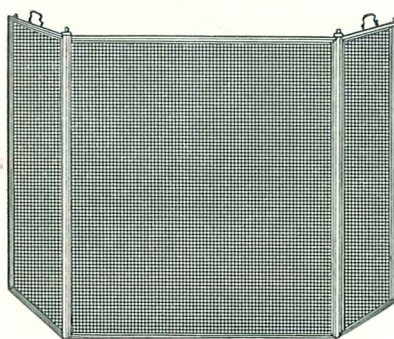
No. 1



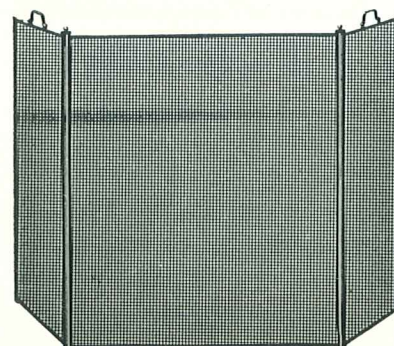
No. 2



No. 314



No. 307



No. 302

Folding Types—The folding screens shown here rest outside of the andirons. They fold down to a minimum size when not in use. Screen should be chosen for size as well as for appearance. Folding screens are more convenient when re-fueling the fire but give less protection.

No. 302, 3 fold, has a rod frame supporting strong wire screening. Adapted for fireplaces 24" to 48" in width. Center panel is 26" wide, side panels 13". Height 30". Furnished in black with brass handles and knobs.

No. 307—Polished brass frame and handles with strong wire screening; fits openings 24" to 48". Center panels 26" wide, side panels 13" wide, height 30".

No. 304—Rod frame, top trimmed in polished brass tubing. Strong steel mesh painted black. Center panel 26" wide, side panels 13". Fits openings 24" to 48". Similar to No. 314 (see illustration) but with straight top instead of arch.

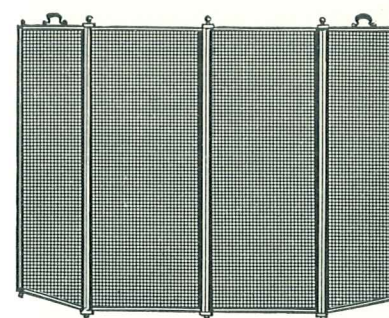
No. 314—Same as No. 304 but with arched top (see illustration).

No. 402—Black, rod frame with brass knobs and handles, each fold 13" wide, height 30". Fits openings 24" to 48".

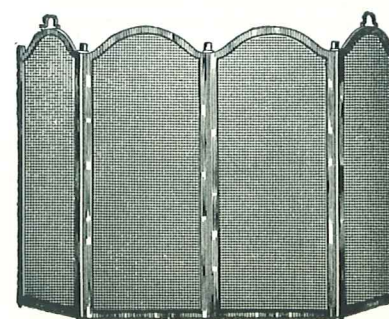
No. 503—Similar to No. 402 but with five folds, 36" high. Fits openings 36" to 60".

No. 416—Square, solid brass, polished, heavy molded frame with curved top and close mesh, strong, black wire cloth; four 13" folds; height 30". Fits openings 24" to 48".

No. 426—Same as No. 416 but with antique brass finish.

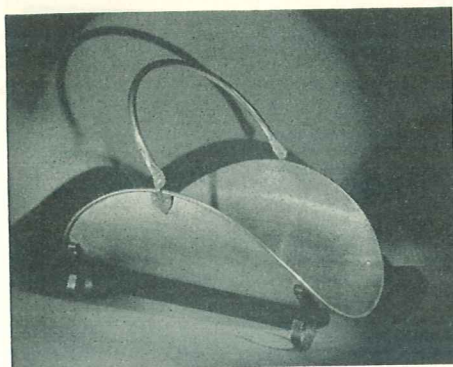


No. 402



No. 416

FUEL CONTAINERS FOR COAL AND WOOD



No. 1, 4 and 5



No. 10, 11 and 12



No. 8

A fire needs fuel and the well equipped, attractive fireside is distinguished by a fuel container that serves durably and looks well.

Donley Wood Carrier, No. 1, 4 and 5 has the form of a metal disk curved upward at the sides and reinforced at the edge with legs and handle of pleasing design. Since wood is a clean fuel, there need be no reluctance to select attractive solid brass or polished brass, though black is available as shown in the summary at right.

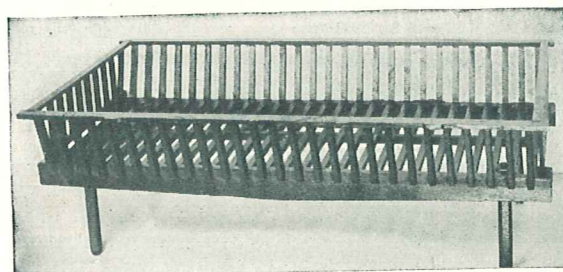
Donley Wood Carrier No. 10, 11 and 12 has a more nearly rectangular form and can be had in a smooth black finish, or two variants of a brass finish, both hammered, one designated as Swedish Hammered.

Donley Coal Hod—The nature of coal calls for a practical black container. There is nothing to prevent a graceful design and an attractive, brass handle. The Donley Coal Hod has both.

Order by Number	Finish		Shipping Weight
	Body	Handle	
No. 1	Black	Brass	7 lbs.
" 4	Solid Brass	Brass	7 "
" 5	Polished Brass	Brass	7 "
" 10	Black, Smooth	Black	7 "
" 11	Antique Brass Hammered	Antique Brass	7 "
" 12	Swed. Hammered	Antique Brass	7 "
" 8	Black	Brass	7 "

SQUARE END "BUNGALOW" FIRE BASKET

This fire basket was developed by the Donley Brothers Co. to meet the restrictions of the wartime metal shortage. It proved so popular that it is being continued in two sizes—24 and 28 inches long, each 15 inches deep. It has square ends and is not shaped to fit the characteristic masonry fireplace with splayed sides. It is quite satisfactory in a Heatsaver Fireplace or a masonry fireplace of proper hearth area.



HANDY FIRE LIGHTER

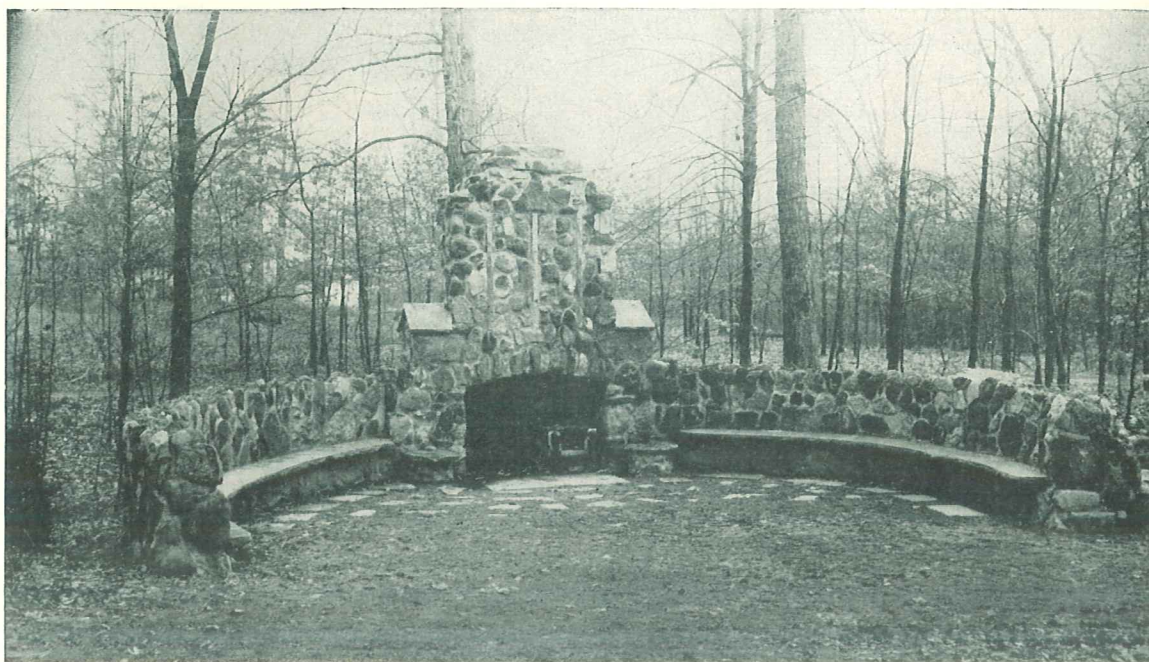


Before matches were to be had, our ancestors carried fire by means of an absorbent stone, provided with a handle and soaked in oil. One variation is commonly known as the Cape Cod Lighter. The oil container takes various forms. The one shown is a saucy looking small black kettle with wide ears, brass top and handle and with a lighter handle to match. Blaze can be kept going for several minutes, which reduces the quantity of kindling needed.

No. 2—Black body and top, brass handle and knob.

No. 3—Black body, brass top and handle.

No. 5—All cast brass, slightly different shape body.



*Outdoor Fireplace of Albert Duncan, Poland Manor, near Youngstown, Ohio
Architect Clarence A. Kissinger, Youngstown, Ohio*

THE OUTDOOR FIREPLACE

IF you crave the joy of an outdoor fireplace—and millions do—there are a number of preliminary questions to be settled and settled right.

Are you planning this attraction for your home premises or for some outing spot where appearance is not so great a factor?

Are you primarily interested in the ornamental advantage of evening fires, or in outdoor cookery, or are you seeking both?

How many people should you provide for, including household and probable guests?

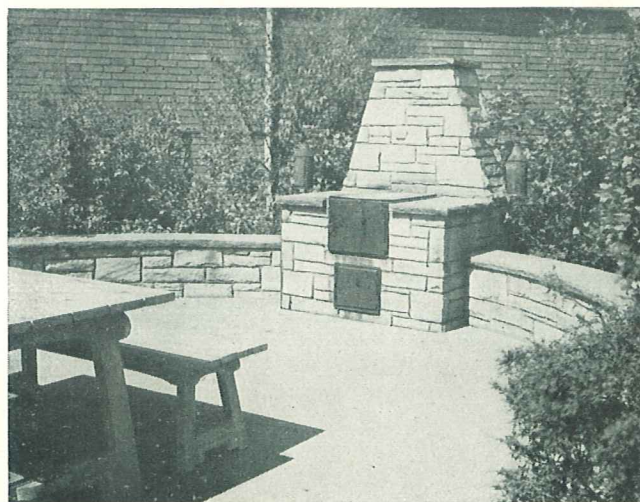
What material do you favor?—brick, stone, concrete?

Can your outdoor fireplace be built against your home or garage, combining its flue with a stack containing other flues; is this desirable?

Would it be a good idea to combine it with an incinerator for disposal of household wastes?



*Outdoor fireplace at North Lima, Ohio, owned by C. I. Auten
Architects, Cook and Canfield. Contractor, Ed. Villani*



Cooking fireplace built around Donley No. 20 Unit, with wing walls. Designed by Norcross & Teare for James R. Nurney of Shaker Heights, Ohio.

SUCCESSFUL FIREPLACES

There is a jocular note of hospitality in this assembly of two No. 20 units, flanked by ovens. The owner, C. S. Harris of Chagrin Falls, Ohio, is known to friends as "Brick", his wife as "Mick". The chef design was executed by Artist Everett Blair.

Is it feasible or desirable to combine the fireplace with a garden wall?

Do you plan, now or in the future, to build a shelter over it, so that it can be enjoyed when rain falls—or be completely enclosed for continuation of barbecue fun in cold weather?

Then the Question of Cost
—How much do you propose to spend? The range is wide. A simple, masonry barbecue may cost no more than \$7.00 for mason materials. The iron grids will be about \$5.00 and the masonry job is not beyond the capacity of a handy owner. This represents the minimum expense. With more liberal allowance and ambitious desires costs may advance, step by step, to the elaborate structures that landscape architects plan as part of an aristocratic garden.

Purpose and Location—In a great majority of cases, fireplaces are planned with the thought of outdoor cookery, although many owners will wish to combine the opportunity for an attractive blaze to brighten the shadows of summer evenings. In a small proportion of cases, a pleasant fire is the sole object and some lovely fireplaces have been built with this in view.



The location is worth careful study. Your outdoor fireplace should be a part of a pleasant garden setting, with plantings to give it a sense of enclosure and with tables and benches conveniently arranged. Too many enthusiastic beginners think only of the barbecue and its food output, forgetting until later the factors of attractiveness and convenience.

Do not build too far from your kitchen door. This warning comes from suburban owners who have erected their fireplaces at the foot of wooded hillsides. The carrying problem spoiled much of the barbecue enjoyment.

Fireplace Materials—All fireplaces represent combinations of masonry with metal grids, doors, covers, reinforcing angles, etc. Common brick is generally the most accessible, low cost masonry material and the easiest to handle. It may be used with its native surface exposed, or it can be painted with specially adapted masonry paints to harmonize with surrounding structures.

Firebrick is a good material with higher resistance to heat than other bricks. However, the ordinary common



Fireplace with Donley No. 20 Range and No. 60 Dutch Oven serves an appreciative family at Medina, Ohio.

or shale brick stands the moderate heat of an outdoor fireplace very well. Face bricks may be had in a variety of tones and textures.

Considerable freedom is practiced in fireplace masonry and one should not overlook local or salvaged materials. Discarded paving brick or cobblestones make attractive fireplaces. Perhaps there is a wealth of field stones on your country premises, or in the neighborhood. If quarry stone is your material, roughly broken fragments can be laid up into a charming rubble. If you prefer cut stone carefully shaped and faced, any stone mason can serve you.

Souvenir Interest—We know of an owner who used a collection of stones, assembled when he was a student geologist, as a facing for his fireplace masonry. He would lecture to guests on the names and origins of various rocks.

Another who had motored widely brought souvenirs of every state in the union—characteristic pieces of native rock. All eventually found their way into his garden fireplace.

Others may use shells or small crystalline stones to weave a pattern or form a panel in the fireplace breast or the face of the chimney.

All such touches help to personalize the fireplace and heighten its character as a domestic shrine.

Things to Think About—When you plan the simplest kind of barbecue, you avoid expense but, at the same time, you incur certain inconveniences. You must be prepared to carry your fuel to the fireplace location every time a fire is lighted. Cooking utensils, too, must be transported to and from the site. Garbage and wastes must be handled so as to avoid offense.

So it may be that after you have enjoyed your simple outdoor fireplace you will be ready for a somewhat more complete installation. Adequate storage spaces are a great convenience. One should hold fuel and another cooking utensils. Sometimes in the more complex structures there will be separate chambers for lighter fuel, such as charcoal, and for wood.

A Donley Garbage Receiver, installed with its opening at ground level, makes a quick, reliable and unobtrusive means of disposing of wastes.

Aids to Completeness—A water tap near the fireplace, or even a length of hose, is a convenience in cleaning utensils. Electric current permits lighting the scene and can be used to turn a spit. Of course you will



Above is shown a garden fireplace on the estate of J. H. Donahey at Aurora, Ohio. The fireplace is largely the work of the owner, including the modeling in cement of the relief bust of an Egyptian princess. Genuine Egyptian artifacts are embedded in the masonry. Mr. Donahey is a well known cartoonist on the Cleveland Plain Dealer.

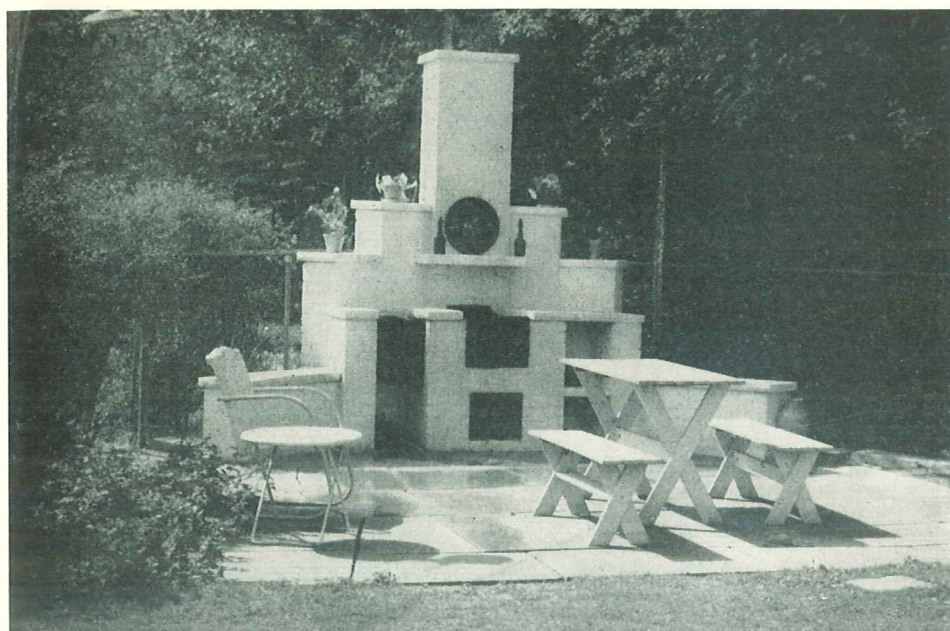
want suitable tables and benches and care in their arrangement will well repay you. Plantings lend a final touch of charm and seclusion.

Proper Support Important—Whatever type or size of fireplace is to be constructed certain questions will arise. Perhaps the first of these is support. The fireplace must not sag or heave as the result of water or frost action. In any region that has freezing temperatures, the experienced builder is likely to advise a foundation carried below the frost line. But there is another way, equally effective in most cases.

That is to support the masonry on a "matte" of concrete, a slab somewhat wider than the structure and six or more inches in thickness. It does not go below frost, rides up and down uniformly when frost temporarily raises the level of the earth, or thaws let it down.

More important than the type of support chosen is the need for a well compacted sub bed. Filled-in earth should have a chance to settle, or be thoroughly tamped.

SUCCESSFUL FIREPLACES



Thoroughly alive to the decorative possibilities of a garden fireplace, Mr. and Mrs. George Miller of Shaker Heights, Ohio, keep theirs spotless and adorned with pottery and plants. It embraces a Donley No. 20 Range and No. 40 steak grill.

Outdoor Fireplace Fuel—Choice of fuel will be influenced by local conditions. In woodland sites, forest faggots will be used. Driftwood is a resource at the water-side. In the case of a garden fireplace, where a bright flame is sought, wood must usually be purchased from commercial sources, coal being a rare alternative.

For a cooking fire, charcoal is preferred, and even where campers are blessed with an abundance of faggots or driftwood, nothing else is so adapted to keeping alive a hot, smokeless bed of coals. Most stores handling camping supplies sell charcoal in convenient packages—also hardware stores, grocery stores, etc.

Moisture Difficulties—Care must be taken to see that the fireplace does not suffer from the elements during the win-

Fireplace on westerly edge of Cleveland, owned and built by F. G. Marquard. The central No. 20 Range has been provided by the owner with a box-like cover under which cookery proceeds while fumes ascend the chimney. There are also oven and storage units.



ter season, when it is out of use. This means tightly joined masonry in which frost action can find no crevice to operate. Ground water, too, may be a menace at certain seasons of the year, and low spots, toward which water might drain, are not to be preferred as fireplace locations.

It is a practice quite frequently followed to elevate the hearth a few inches above ground level in case of a garden fireplace; and to use care in the case of a cooking fireplace to avoid having the ash chamber invaded by ground drainage.

Control of Smoke—The smoke problem in the case of an outdoor fireplace is different, and, on the whole, more perplexing than in an indoor fireplace. Constant air currents tend to blow the smoke into the most inconvenient quarters. Chimney heights are generally less, and draft correspondingly diminished. In the case of a garden fireplace, relief from smoke nuisance is promoted by facing the fireplace in the direction of prevailing winds and by shielding it as much as possible from counter currents. The flue should be ample—the throat relatively open. A damper is of no avail and is, therefore, omitted. Depth of the hearth is usually greater than for indoor fireplaces.

In the case of the cooking fireplace with a chimney, the prime consideration is to have a fire chamber that can be closed tightly when smoke-producing fuel is being burned. If the top is opened during the use of charcoal fuel, it should be arranged to protect the face of the chimney from discoloration.

This fireplace at the home of Otto Hildebrand, Brecksville, Ohio, offers an open fire and crane, while there is a No. 20 Range, placed laterally in the left wing, besides an oven and storage spaces.



Outdoor Fireplace Designs

- No. 10 Simplest type of cooking fireplace
- No. 20 Outdoor Range Unit
- No. 30 Charcoal Stove, free standing or installed in masonry
- No. 35 Charcoal "Barbecart"
- No. 40 Duplex Grill (built in)
- No. 50 Portable Duplex Grill
- No. 55 Portable Duplex Grill with Warming Section
- No. 60 Dutch Oven Assembly
- No. 70 Universal Fireplace

On ensuing pages these seven outdoor suggestions will be illustrated in design and photograph. One of them is a portable device in which no masonry is used. Another is optionally portable, although rather heavy (60 pounds) for constant handling.

The others, we believe, afford the outdoor fireplace devotee a wide choice for his requirements in outdoor cooking facilities and incidental enjoyment. This statement calls for two explanations.

First, while the basic design is simple in each case, there is every chance for the individual to express his fancy in the character of the masonry, in devising seats or wingwalls as a part of the installation.

Second, the possibilities in combining units are practically unlimited. It is quite common for the same structure to include a No. 20 Range Unit and a No. 40 Duplex Grill. An oven unit, No. 60, is frequently included. First we will deal with single units. The listing at the top of the page is repeated with more detail on last page. Now we will consider the—

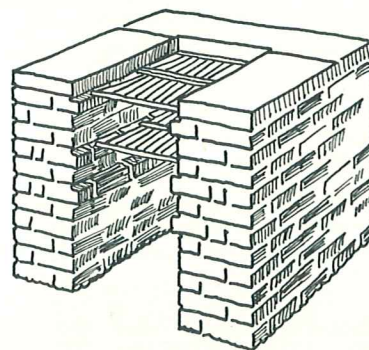
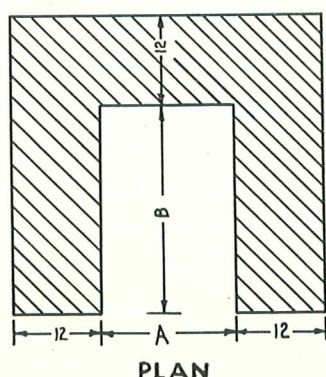
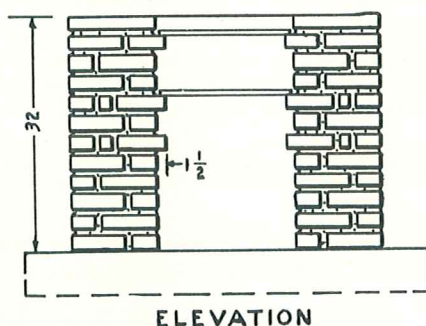
No. 10 Outdoor Cooking Grill

This handy barbecue unit offers the quickest and easiest way to achieve a permanent installation on which appetizing meals can be cooked. As illustrated here, it is made of brick. Projection of the brick into the fire area offers a shelf to support the iron grates on which rest the charcoal fire below and the cooking utensils above. Three such projections are shown, al-

though grates at two levels are the rule. Having three levels gives opportunity to shift the grates to suit the fuel available.

Three sizes of barbecue are indicated, based on different sizes of grate. The smallest size takes a 12 by 19½-inch grate. Two are required. The second or 10C size takes a 12 by 25 grate and the fire chamber is correspondingly deeper. By using two grates, 12x17¼ on each level, four in all, the structure can be enlarged to offer an 18 by 28-inch fire area.

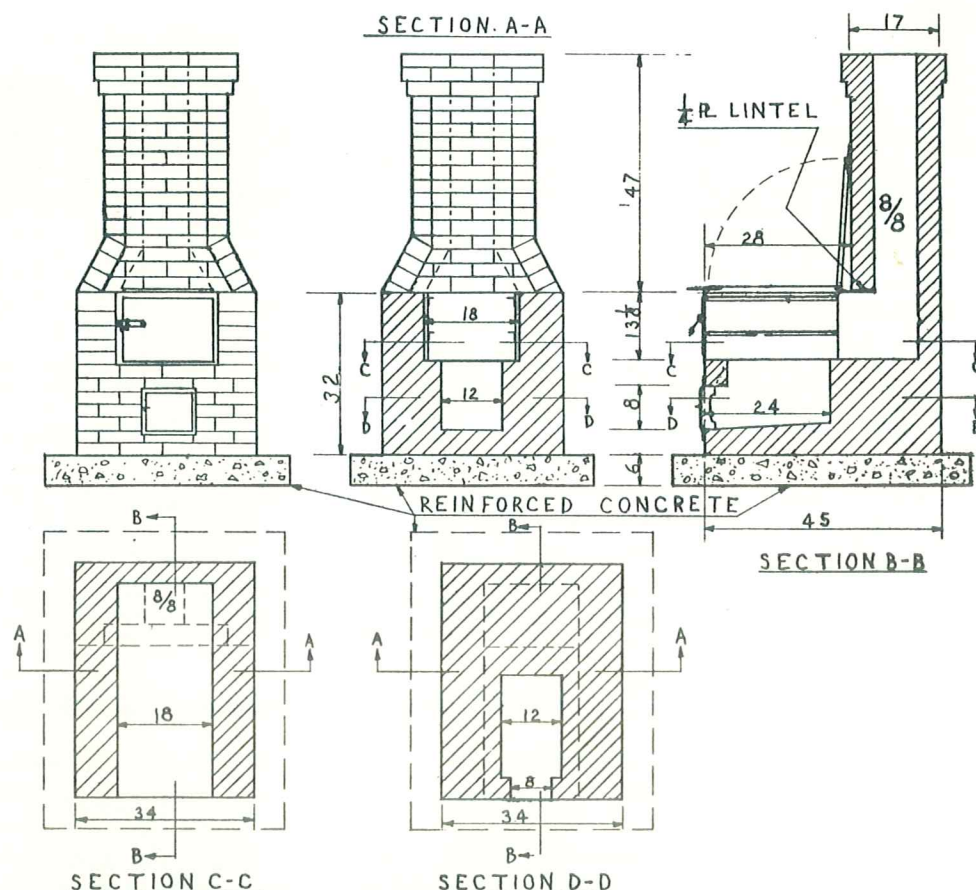
Matte support is indicated. This means digging a shallow form in the earth, 6 inches deep and about 4½ feet square. After the sub bed is smoothed and compacted, concrete is poured and allowed to set before proceeding with the brick or stone work. A level cap of concrete or stone imparts finish and makes a smooth surface on which to rest cooking utensils.



Donley No. 10 Cooking Fireplace simple to construct. The table below indicates three sizes.

Unit Number	A	B	Grate Size	Grates Needed	Brick Needed
10-A	13"	24"	12x19½x½	2	410
10-C	12"	28"	12x25 x½	2	450
10-D	18"	28"	12x17¼x½	4	475

No. 20 Outdoor Range



SECTION C-C
SECTION D-D
NO. 20 OUTDOOR FIREPLACE
INSTALLATION DETAILS

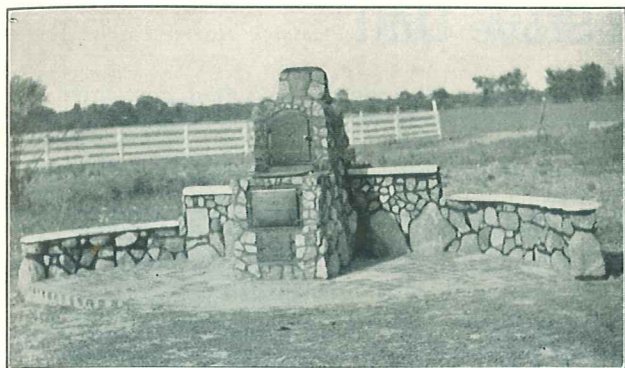
This No. 20 Range Unit is constructed with a view to easy removal from the masonry whenever necessary to remove rust or to protect it with paint. Its useful life can be greatly extended and appearance improved if it is withdrawn at the approach of cold weather, wire brushed and painted, instead of accumulating more rust by months of unnecessary exposure.

This No. 20 Range Unit is ready to install in a masonry setting. Enclosed at the sides, it can be pulled out for winter storage or re-conditioning. In case of mishap, it can be replaced without disturbing the masonry setting.



AMONG Donley fireplace types, easily the most popular is the Donley No. 20 Outdoor Cooking Range. The elevation, profile and two sections shown on this page indicate its construction. The chief metal feature is the unit shown at the left. It includes a staunch frame with supports for grates at two levels, also a fuel door, enclosed sides and a hinged top that can be turned back against the chimney and protect the masonry from soot.

Strong, Welded Construction—The Donley No. 20 Range Unit consists of a strongly welded frame, 28½" by 18" in horizontal section and 14" high. It has projections at three levels to support movable grates. If desired, solid top sections may be substituted for one or both of the upper grids. This gives its top the appearance of an old-fashioned cooking range, with round, cast iron lids. However, the enclosure of the flame does not depend on the use of the solid top, for—



No. 20 Range unit with oven in chimney at home of Mrs. Elizabeth Jones near Wellington, Ohio.

A hinged steel cover completely encloses the unit from above. It prevents the escape of smoke, except through the chimney, when fires are being kindled or raw fuel is used. With a charcoal or hot ember fire, the cover may be swung upward against the chimney, where it protects the masonry from soot and keeps your fireplace looking fresh and attractive.

A steel fire door gives access from the front and facilitates handling and cleaning of the grates. It is provided with a latch.

The ash-pit below grate level is likewise provided with a door—a standard 8x8 clean-out door which is anchored in the masonry. This door may be closed or left open a few inches according to draft requirements.

Solid top section occupies one-half of the top surface, taking the place of one of the two grates that are otherwise used. Two solid sections give a complete cast-iron top with four circular lids.

Easy to Care For—Careful owners like to keep their outdoor fireplaces looking well. The corrosive effects

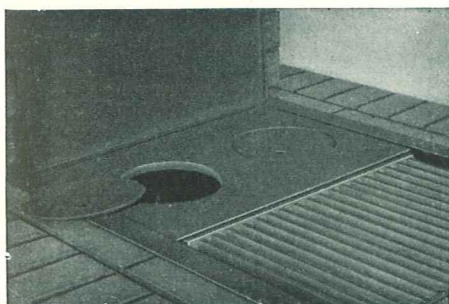
No. 20 Range unit installed in stone on premises of E. H. Chaney, Rocky River, Ohio.



of fire, plus exposure to the elements, makes frequent attention necessary. The Donley No. 20 Unit can be pulled completely out of the masonry for winter attention, wire brushed and given protective painting.

The steel top is particularly exposed to heat and most likely to corrode and warp. It is therefore made with view to removal and replacement whenever beyond repair. The two hinges have a common axis in a single long pin which can be withdrawn and the top freed.

Choice of Assemblies—So many alternatives are possible that the reader will do well to consult the summary of Outdoor Fireplace Equipment on last page and read across, so that you will know just what your order includes. The summary shows that it may take any one of three forms, according to your preference of what you want in the way of solid top sections.



Above is an optional feature, a cast iron section with typical round stove openings and lids. It takes the place of one grate. Two can be used at the same time if desired.

Fireplace at rural home of Dr. G. Murray Hawk in South Euclid, Ohio—a No. 20 Range with No. 60 Dutch Oven.



SUCCESSFUL FIREPLACES

No. 30 Charcoal Stove Unit

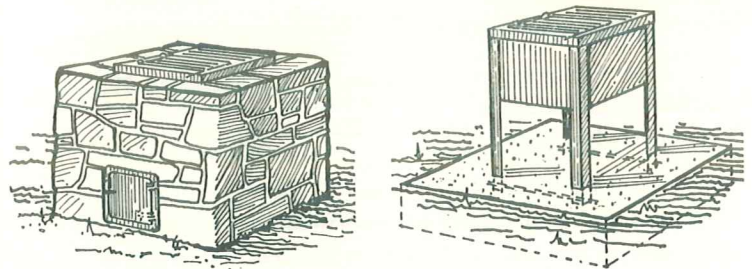


Two methods are indicated at the right by which the Charcoal Stove may be converted to a permanent installation. First, it may be encased in masonry or, second, the legs may be anchored in a concrete foundation.

Those who appreciate compactness and convenience in an outdoor cooking unit will like this all-metal charcoal stove. It can be treated as a semi-portable unit, carried indoors in winter for better care—perhaps transported to the scene of a summer camp for several weeks' enjoyment, but hardly light enough (60 pounds) to be carried around in the car for casual fun.

On the other hand, it is often encased in masonry and treated as a permanent installation. In other cases, such as in public parks, the feet are embedded in concrete, avoiding the fear that users might decide to change its location.

The body and legs of the unit are of steel. It contains a grid for the support of a charcoal fire and cooking grid at the top, consisting of $\frac{1}{8}$ " welded rods. A portion of the top is hinged to afford access to the fire. When the unit is encased in masonry, it calls for an 8" by 8" clean-out door for the removal of ashes. With no loose parts to be mislaid, the Donley Charcoal Stove fulfills a variety of needs where simplicity and compactness count. Height is 24", with a top area of $14\frac{1}{2}$ " by $20\frac{1}{2}$ ". The shipping weight is 60 pounds.



No. 35 Charcoal "Barbecart"

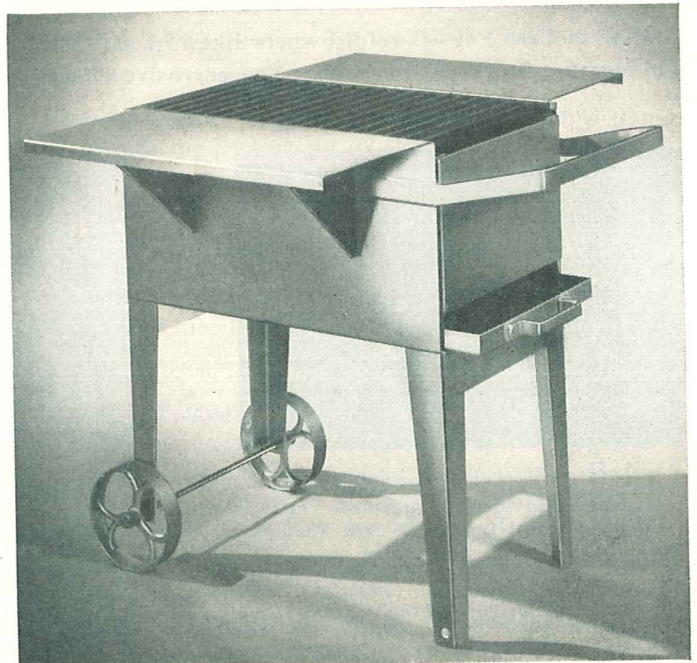
The Charcoal "Barbecart" offers the same type of simplified cookery as the No. 30 unit shown above, but the accent is on flexibility in location and use. While the Charcoal Stove has its grates firmly attached, fitting it for public park use, the "Barbecart" is strictly a family possession. It gives moderate portability about the owner's premises, but is not designed for motor travel, as are Portable Grills Nos. 50 and 55.

With its other conveniences, it offers two wing shelves, each 6 by 18 inches in size and easily detachable when the unit is stored. The "Barbecart" appeals particularly to families in rented homes where a permanent installation would not be justified.

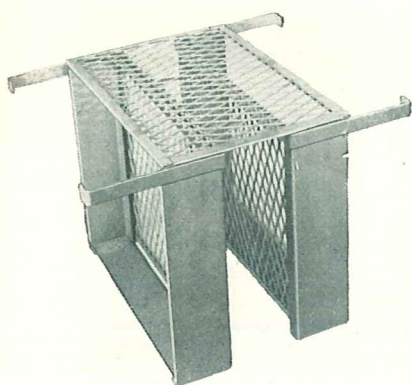
Two other advantages of its easy mobility are—(1) It can be moved about the lawn or garden to take advantage of shade or shelter. (2) It can be kept out of the weather when not in use.

Ash pan in the form of a drawer keeps hot cinders from marring the grass. Two 12 by 19-inch grids are removable. Height is 27 inches. Width with shelves demounted, 13 inches. Length, including wheels and handle, 28 inches. Shipping weight, 96 pounds.

Below is the handy "Barbecart" that can be wheeled to any convenient spot about the lawn or garden and when not in use, has the protection of the garage to keep it from undue exposure.



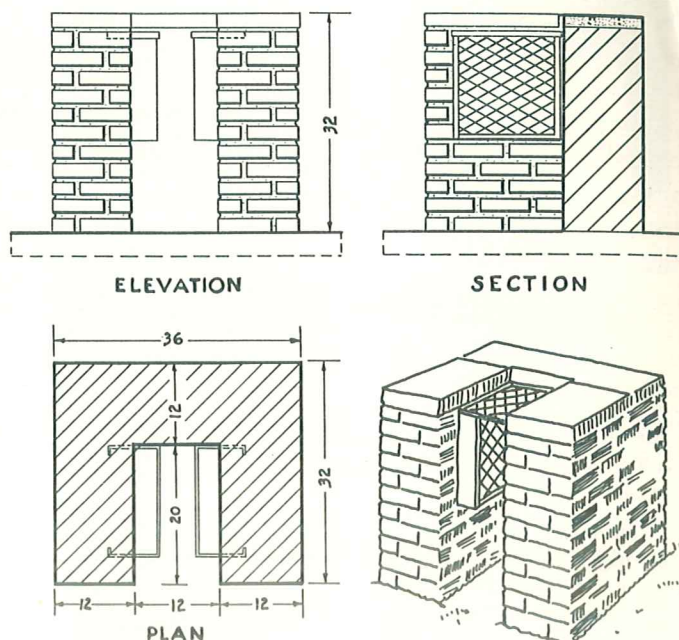
No. 40 Duplex Steak Grill



"Between two fires" is an old simile for being in a hot spot. That is the description, too, which fits the Donley No. 40 Steak Grill. It offers a divided fire—two flat, vertical metal baskets filled with glowing charcoal. In the narrow space between, the chef introduces whatever is to be grilled—a juicy steak, fresh caught fish, alluring chops or

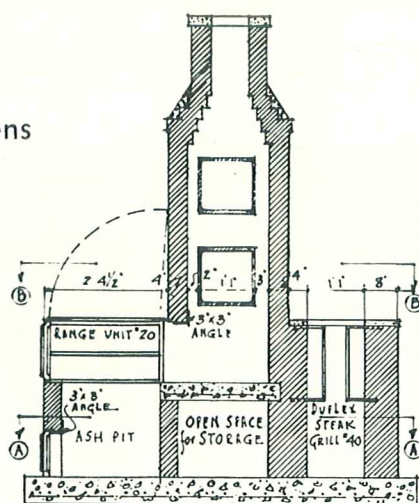
cutlets. It also makes a rapid toaster for bread or sandwiches, introduced by means of a toasting frame.

This steak grill is popular as an auxiliary to the No. 20 Range or other units. But it also makes an excellent outdoor cooking device all by itself. It is by no means confined to grilling operations. A separate steel grid, laid on top, fits it for any kind of stove top cookery. In characteristic cases, the coffee will be started and vegetables set to boil. Later, when guests arrive, the grilling of the meat portions commences and is quickly repeated, each being served with a hot portion in rapid succession.

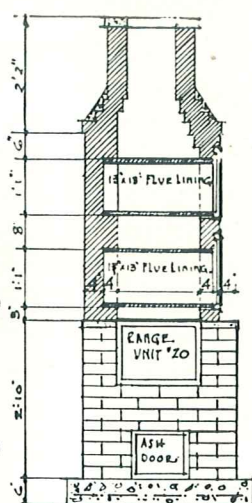
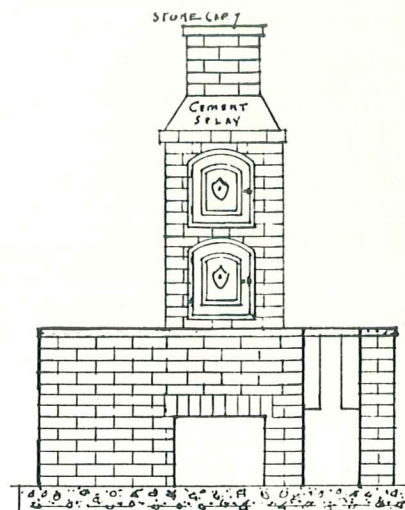


While a tined fork may be used, we strongly recommend the frame type of broiling fork, in which viands are held between wires. If portability is the object, consider the Donley No. 50 Portable Steak Grill shown on the next page.

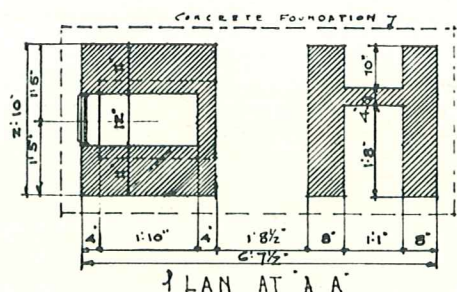
Combination of Grill With Range & Ovens



SECTION

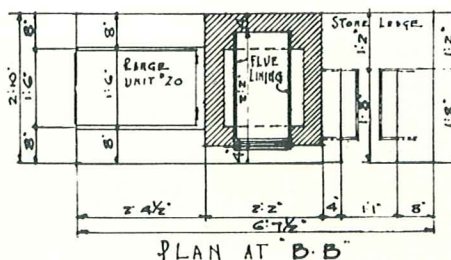
FRONT ELEVATION
and SECTION THRU CHIMNEY

SIDE ELEVATION



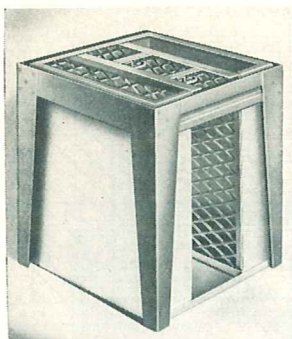
PLAN AT 'A-A'

This assembly calls for Donley No. 20 and No. 40 Units—also two Dutch Oven Doors.



PLAN AT 'B-B'

Portable Duplex Steak Grill, No. 50



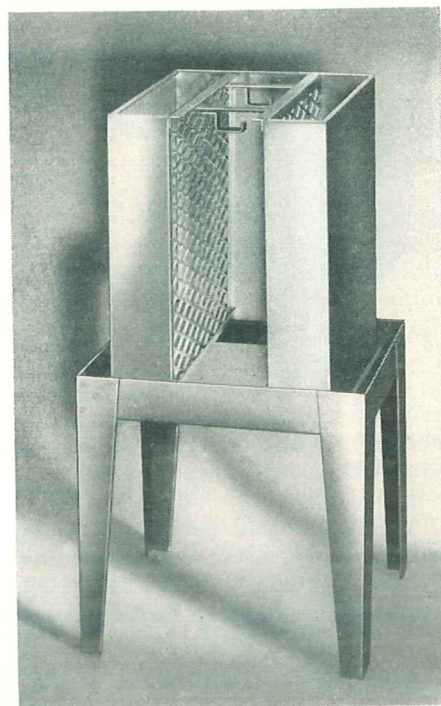
*Ready for travel.
Space occupied is about
14" x 14" x 14".*

This two-piece metal unit, weighing only 18 pounds, offers the same advantages as the No. 40 Grill, but can be loaded into an automobile and carried to the site of a camp or picnic. While light in weight, it must not be confused with flimsier devices. It is not a season purchase but with due care will last many years.

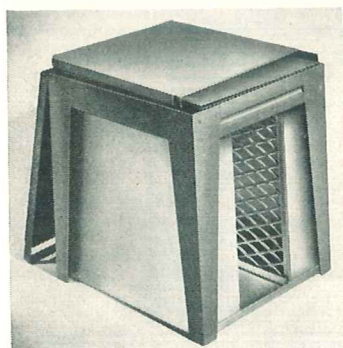
When the two parts are nested as shown above, it occupies a cubic space approximately 14" x 14" x 14". It is

erected for use by lifting out the grill section from the leg section and giving it a quarter turn, in which position it rests securely upon the inner flange of the leg section. When the day's fun is over, it is a simple matter to lift out the grill section, give it a quarter turn and replace it within the leg frame.

This device is made from steel sheets and reinforcing members, strongly welded. Two fire chambers with heavy, open mesh on their opposed sides afford room for two hot charcoal fires. Meat or fish held between these fires on a grilling fork or frame is "done" with a speed unknown in other cookery. Cross members at the top are close enough to support pots or pans for other kinds of cookery. Hooks attached beneath them hold grilling frames or forks steady. Shipping weight, 22 pounds.



Portable Duplex Steak Grill, No. 55 With Warming Section



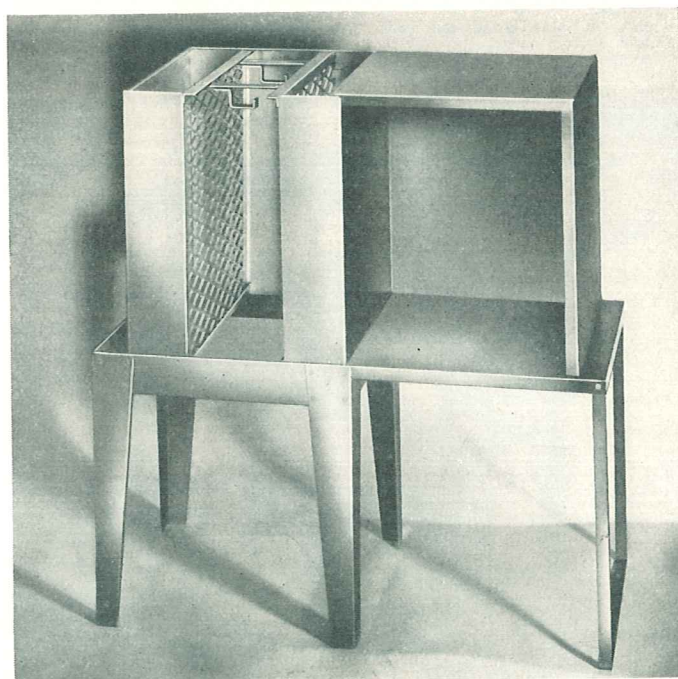
*Shelf and enclosure fold
compactly with grilling unit.*

The No. 55 Steak Grill is the No. 50 carried a step forward in convenience and utility. When demounted for carrying, as shown at the left, it takes up very little more room than the No. 50 Grill. When assembled

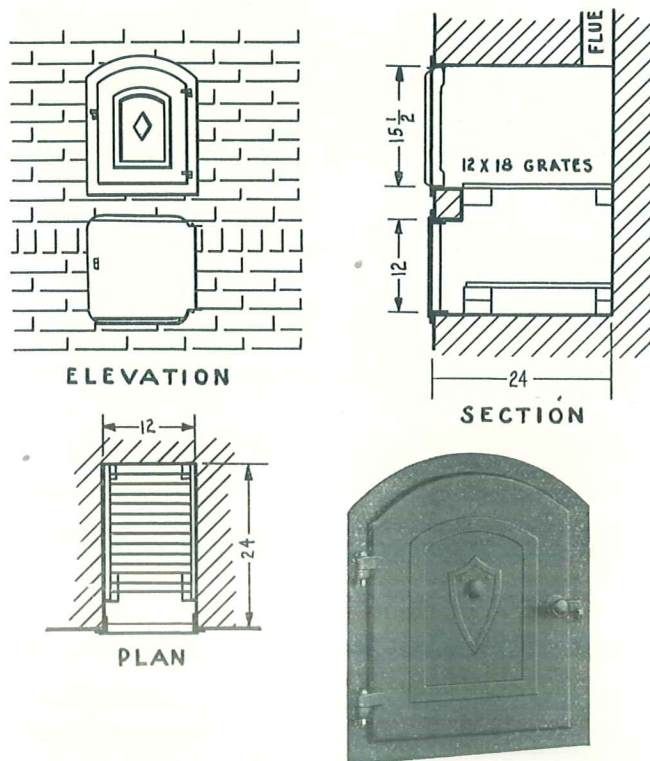
for use, it affords a section at the side for the temporary storage of food in preparation for serving. While not an oven, being open at the front, it derives considerable heat from the grill and keeps dishes from getting chilled as guests assemble.

The warming section comes in two parts. The base and outer support is one. Three hinged sheets, forming the top and two sides, make up the other. If only a small table top is desired, the first part alone is erected. If the entire warming section is erected, its top makes a convenient shelf for temporary placing of food and utensils.

The Grill section and legs of the No. 55 are identical with that of the No. 50. Total length of the No. 55, assembled, is 28". Height 27", width 14". Shipping weight, 30 pounds.



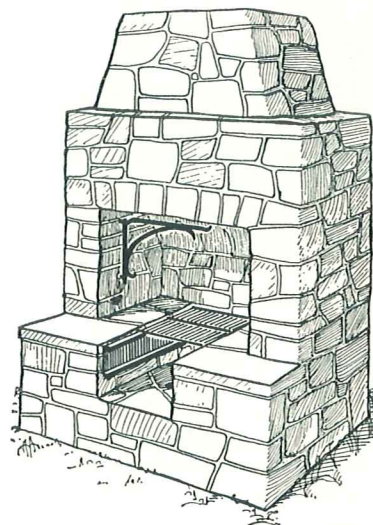
Outdoor Dutch Oven Unit, No. 60



The Dutch Oven is largely a factor in period design of indoor fireplaces. However, in the outdoor fireplace, the Dutch Oven has a much more practical role, since there is little indoor fireplace cooking today. Rarely erected by itself, it is a valuable auxiliary to other outdoor cooking units. It takes care of baking operations which the others cannot do. Constructed according to the design shown, it can also be used for boiling vegetables, the fumes passing up the vent into the flue.

Certain features distinguish the modern, outdoor Dutch Oven from certain older types. (1) It has separate doors for fire tending and for cookery. (2) It is invariably vented, either into the main flue or into a smaller flue of its own. (3) It has grates for the support of a charcoal fire and, above it, for the support of cooking utensils. The Donley Dutch Oven Door is indicated for reception of cooking utensils, with a 12 by 12-inch Donley Clean-out Door below. There are also two grates 12 by 18 inches.

No. 70 Universal Outdoor Fireplace



People who enjoy outdoor cooking also often like a bright evening fire and are not quite satisfied with a cooking fire that is largely enclosed.

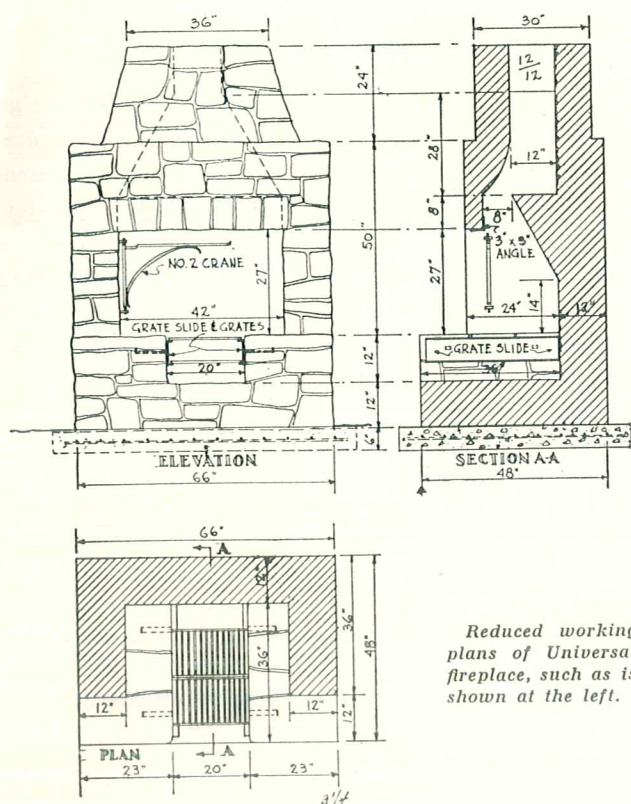
So here is the Donley No. 70 Universal Outdoor Fireplace, equally adapted to a bright warm blaze or to a cooking fire that may be charcoal or coarser fuel.

Above the level of the hearth shoulders it is a good

At the left, Universal Fireplace No. 70 in garden of S. M. Gunderson, Shaker Heights, Ohio. Above, perspective showing arrangement of grates.

deal like any good indoor fireplace, excepting that there is no damper and the throat and flue have somewhat larger capacity than would be found in a corresponding indoor fireplace. Also it has a crane.

SUCCESSFUL FIREPLACES



It is the depressed center of the hearth that gives the Universal Fireplace its versatile capacity as a means of cooking. The total width of the hearth is 42 inches, with shoulders extending forward 12 inches in front of the face. The central 20 inches of this hearth area is depressed 12 inches and provided with metal grate slides at two levels, for the support of four grates 12"x19" and $\frac{1}{2}$ " thick.

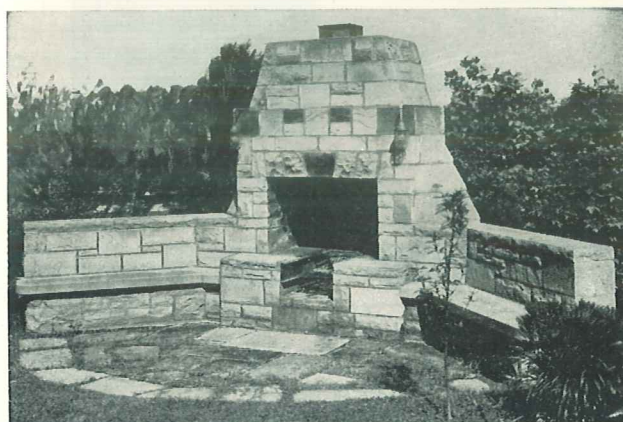
With your Universal fireplace, you can start a wood fire, using your upper grates as a part of the hearth. If, after enjoying the brightness and warmth, somebody is interested in food, the upper grates can be pulled forward and embers dropped to the lower level. The fire can then be fed with charcoal as required and cooking proceed on the upper grates. Or, the sequence can be reversed. Cooking can come first, ending the evening with a bright fire. Always you have the crane with which to support a kettle for cooking or merely to supply a need for warm water.

At the seaside, mountains, forest lodge or just a plain back yard, wherever people gather for long summer or autumn evenings, your Universal Fireplace is an unfailing social center. Good by itself, it lends itself to combinations with the No. 40 Steak Grill, the No. 60 Dutch Oven or other units. Full equipment is described in the table on inside rear cover.

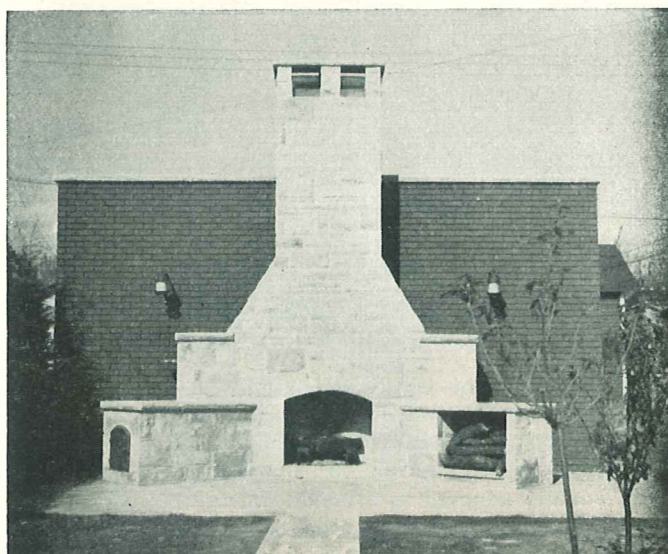
Fireplace of the Universal type built against garage at the home of Charles T. Weller, Huntington, West Virginia.



No. 70 Cooking Fireplace on premises of Clarence H. Shafer, University Heights, Ohio.



No. 70 Cooking Fireplace at home of A. R. Green, Shaker Heights, Ohio. Mr. Green is vice-president of the Cleveland Quarries Co., which furnished the very effective stone.



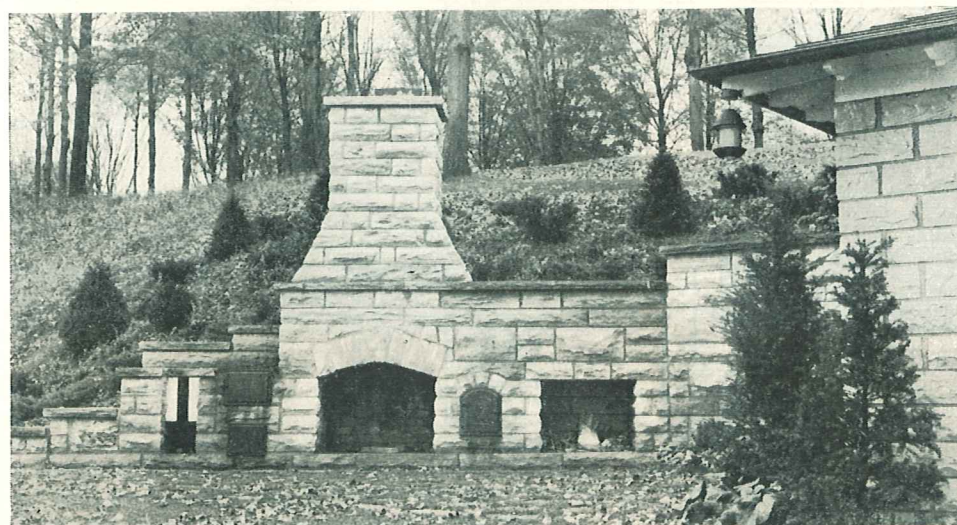


More Variations of the Universal Fireplace Idea

Fireplace of the Universal type at home of H. R. Miller, Edgecliff Drive, Euclid, Ohio. Its large, open fire has crane and kettle, also removable electric spit that can be placed on hearth. No. 20 Range is shown in left wing and No. 60 Dutch Oven in right wing. There is a second No. 20 Range in the left wing, opening to the side. The Millers find their fireplace an ideal medium for outdoor entertainment of considerable companies of friends.

After the New England hurricane wrecked a sea wall at Giant Beach, Niantic, Conn., it was rebuilt with this outdoor fireplace incorporated in the masonry. The owner, John W. Nickerson, used a Donley Dutch Oven assembly and other Donley equipment.

A circular concrete table, supported by a column of field stone, stands in the center of a plaza paved with random slabs of stone. Besides Donley Crane and Dutch Oven Door, this fireplace has 16" Log Rests, 12" by 24" grid and 12" by 12" spark guard on the chimney. The recess beneath the fireplace opening is used for general storage.



This outdoor fireplace adjoins a bath house on the waterside estate of E. T. Loeblein, East Twin Lake, Ohio. Equipment includes—

No. 20 Range assembly.

No. 40 Duplex Grill assembly.

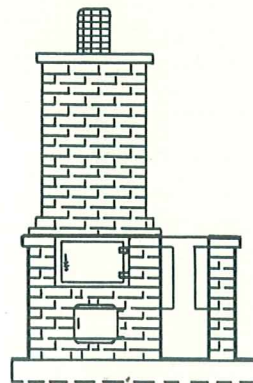
No. 60 Dutch Oven, heated by open fire through metal partition.

SUCCESSFUL FIREPLACES

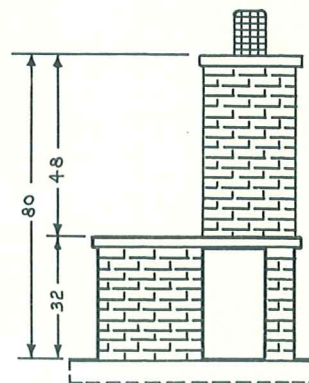
Combinations of Outdoor Cooking Units

No. 20 Range with No. 40 Steak Grill

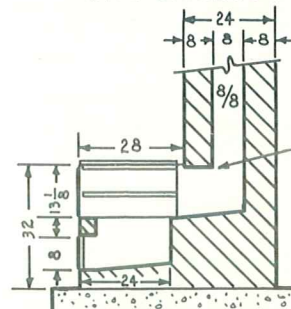
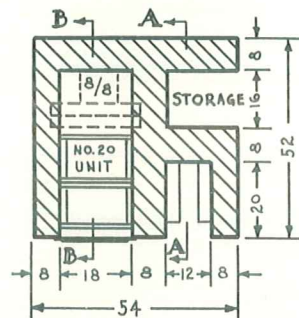
Designers will sometimes prefer their own ideas in combining various Donley units in a single structure. Here are two suggestions, one for a two-unit fireplace and one for a three-unit combination. These combinations can be erected in confidence that they will fit and give satisfaction. Other materials may be selected and wingwalls, benches or other structures added if desired.



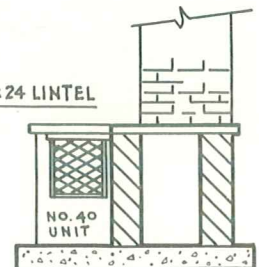
FRONT ELEVATION



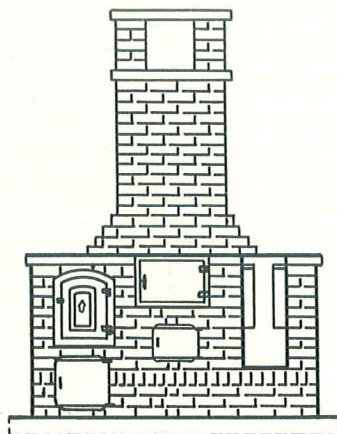
SIDE ELEVATION



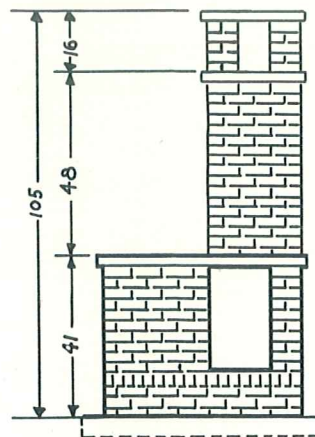
SECTION D-D



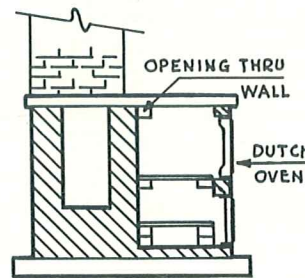
SECTION A-A



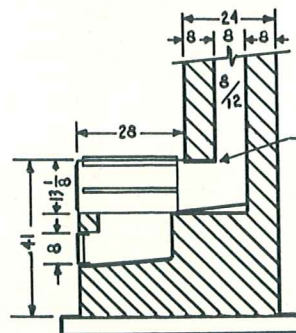
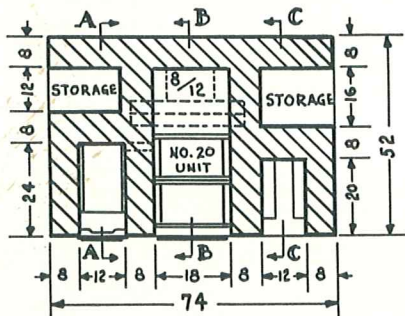
FRONT ELEVATION



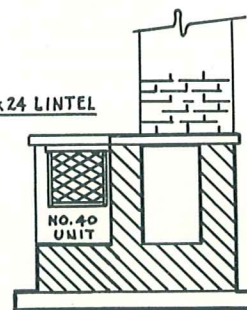
SIDE ELEVATION



SECTION A-A

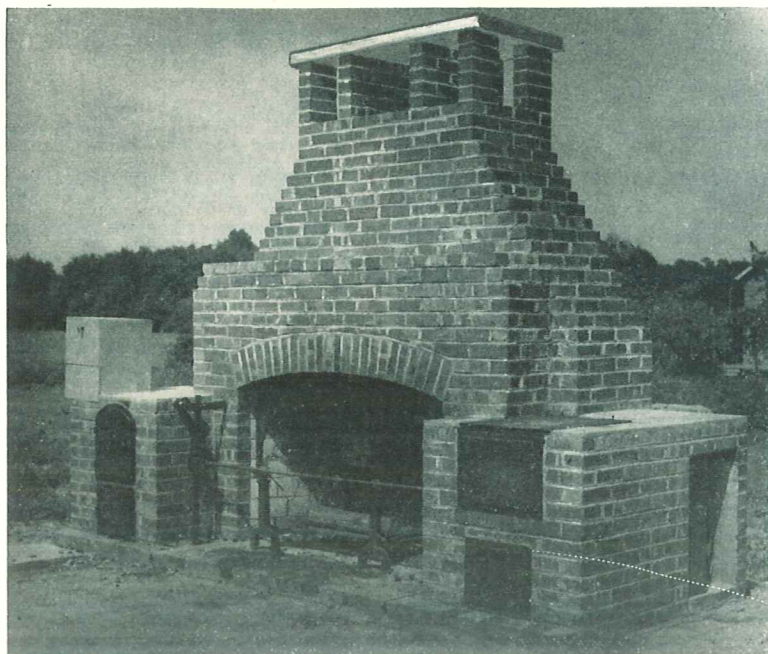


SECTION D-D



SECTION C-C

No. 20 Range Unit with No. 40 Steak Grill and No. 60 Dutch Oven

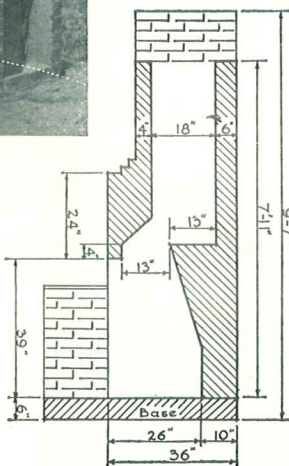
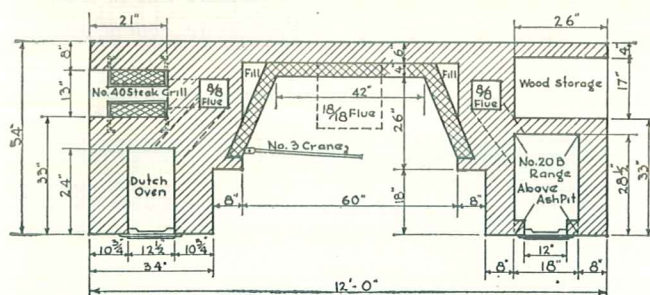


Electrically Driven Spit Completes This Fireplace

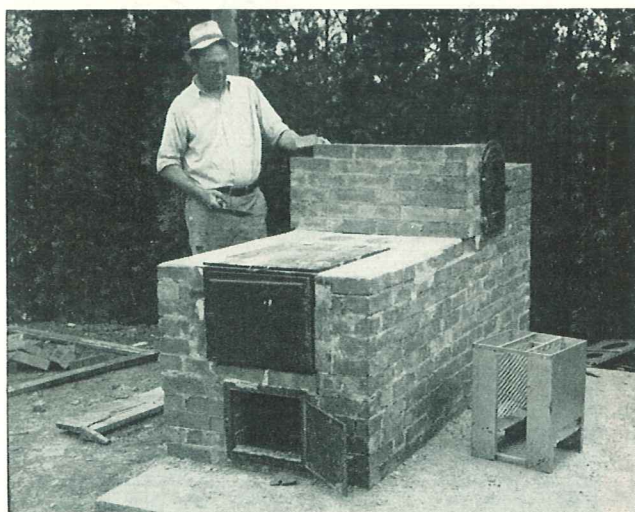
Many owners of fireplaces have drawn inspiration from this fine combination unit, planned and largely constructed by C. E. Wagnitz of Northfield, Ohio. It has open fire, before which is an electrically operated spit. In the wing structures are a Donley No. 20 Range, a No. 40 Steak Grill and a No. 60 Dutch Oven, besides a storage unit of liberal size. Electric current is brought to the fireplace by an underground conduit. A small motor, housed above the Dutch Oven, drives

the spit which has carried as many as thirty chickens at a time, when Mr. Wagnitz entertains business groups at his rural home. He has also roasted a 30-pound pig, or a whole lamb when such was the menu.

Formerly he relied on rheostat control of speeds, but lately finds the two speeds obtainable by chain ratios answer every purpose.



One Way to Heat an Oven



There are several ways to utilize the heat of a No. 20 range unit to heat an oven. In the case pictured, a metal oven was installed between the No. 20 range and the flue, so that heated products of combustion pass around it. In other cases, an adjoining oven is warmed by heat passing through the metal side of the range, there being no masonry wall between.

Incinerator Backs Up Fireplace

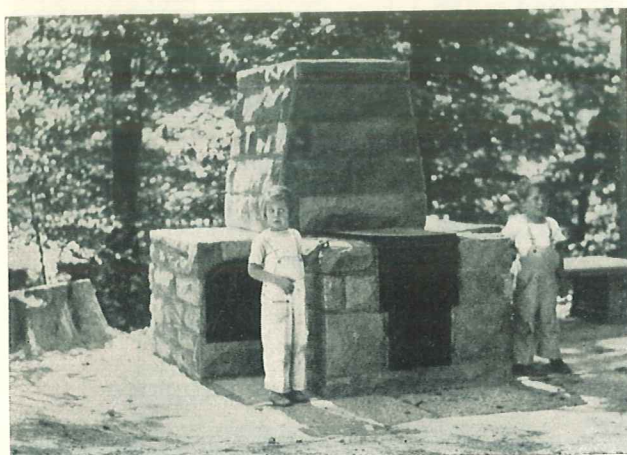


Seen from the front, this is a combination cooking fireplace, with No. 20 range unit, No. 40 steak grill and oven. This rear view shows an added feature, the Donley Incinerator for disposal of garbage and wastes. The owner is Herschel Driver of Euclid, Ohio. By his invitation, neighbors use both cooking and disposal facilities.

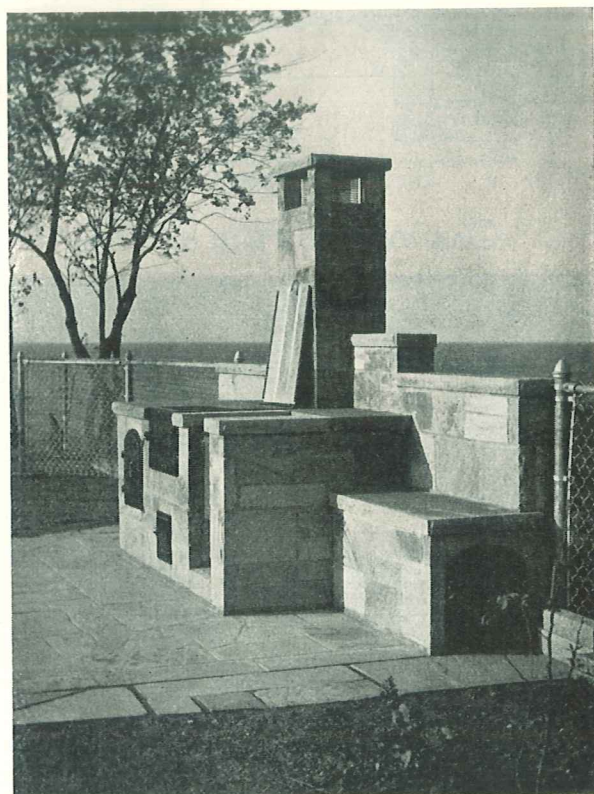


This beautiful combination outdoor fireplace, shown at the left, adorns the premises of Norman M. Telzrow, Hollywood, Florida. It was built by Fred R. Sedore of Youngstown, Ohio. Left wing contains a No. 60 Dutch Oven and the right a No. 20 Range.

Below is a beautiful fireplace of variegated Crab Orchard stone overlooking Lake Erie from the Bay, Ohio, premises of H. H. Boerstler, who is identified with the Cleveland contracting firm of Gillmore, Carmichael & Olson. Stone masonry was in charge of Dave Crockett and brick masonry of Noah Henry, both of Gillmore, Carmichael & Olson.



Above is a fireplace built by William J. Kennedy of Cleveland, former Secretary of State for Ohio and later Federal Housing Co-ordinator. Never a mason, he says, until fireplaces allured him. Two grandchildren stand by.



The No. 20 Range at the left is quite fittingly constructed against a smokehouse at the farm home of Donald Johnson, Boston township, Summit County, Ohio.



Accessories for Outdoor Cooking

Underground Rubbish Receiver

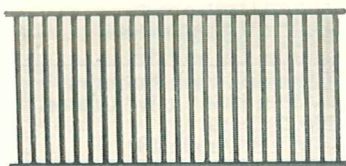
Every outdoor fireplace has its disposal problem. Ashes, cooking wastes and unburnable rubbish may be quickly put out of sight in this Donley Receiver, installed underground with its top flush with the surface.

Receiver consists of outer shell and inner container. Shell has hinged ring cover (used only in removing container for emptying) and service lid operated by a foot lever.

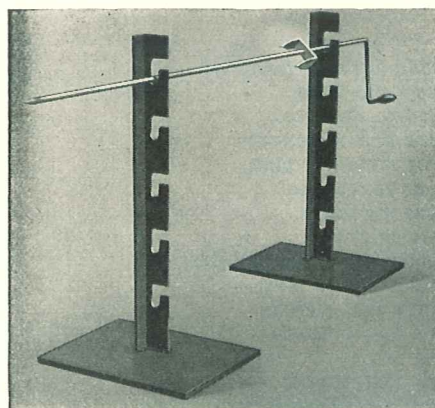


No.	Gallon Capacity	Overall Depth	Shipping Weight
110	10	20½"	40 lbs.
115	15	26"	47 lbs.
121	21	29"	70 lbs.

Staunch Cooking Grates



These grates, or grids, are high-grade castings, made in a variety of sizes, the more popular being 17" x 8", 17" x 10", 13" x 12", 19" x 12", 25" x 12".



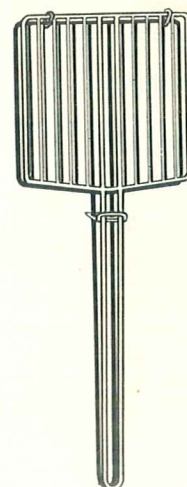
Large, General Purpose Frying Pan

Our customers pioneered this generous utensil. The first one was made to order. Others followed as soon as the first one had a chance to make its merits felt. It is 16 by 22 inches in area, made of heavy gage steel, with a one-inch flange turned up all around and welded at the corners. Handles are loops of rod stock, welded to the pan.

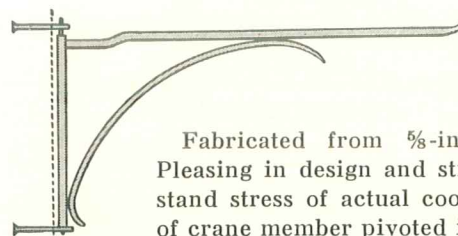
Convenient Broiling Fork

This large frame type of broiling fork accelerates the broiling or toasting operation and permits the serving of more guests with hot food simultaneously. Especially suitable for divided steak grill, it is strongly made from light, welded rods.

The size shown has a 12 by 12-inch frame with 13-inch handle. The same frame size is furnished with a 25-inch handle. There is also a 9 by 9-inch frame with a 15-inch handle.



Useful Fireplace Crane

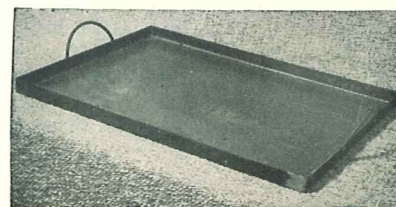


Fabricated from 5/8-inch steel bars. Pleasing in design and strong enough to stand stress of actual cooking. Consists of crane member pivoted in two anchors, in such manner that crane can be easily removed and replaced.

No.	Length of Crane	Width of Fireplace Openings	Between Anchors	Shipping Weight
1	22"	24" to 31"	14¼"	10 lbs.
2	26½"	32" to 43"	14¼"	12 lbs.
3	32½"	44" to 53"	18¼"	14 lbs.
4	41½"	54" to 72"	21¼"	16 lbs.

Handy Spit for Open Air Roasting

This simple, convenient Donley Spit can be used wherever there is a roasting fire and a place to put it. Five notches for five different heights make for convenient use over a low charcoal grill or before open fire. The 14-inch uprights are of heavy angle iron and welded to substantial bases, 6 by 8 inches in size. The spit is a ¼-inch rod pointed at one end, while the other end is bent into a crank for turning, with revolving wooden handle. Fork welded to the rod holds the chicken or other viands and makes it rotate with the spit. The spit is 30 inches long, but supports may be set at any convenient distance apart.



SUMMARY OF OUTDOOR FIREPLACE EQUIPMENT

Unit Numbers in Left Column Refer to Preceding Designs

Unit No.	Description (Use Numbers when Ordering)		Shipping Weight
No. 10A	Grate Area 12" x 19½"	2 Grates 12" x 19½" x ½"	22½ lbs.
No. 10C	Grate Area 12" x 25"	2 Grates 12" x 25"	29 lbs.
No. 10D	Grate Area 18" x 24"	4 Grates 12" x 17¼" x ½"	44 lbs.
No. 20	Range Assembly 18" x 29" x 14"	Frame including Hinged Top 4 Grates, 2 Doors, 1 Lintel	124 lbs.
No. 20-1S	Range Assembly 18" x 29" x 14"	Frame including Hinged Top 3 Grates, 2 Doors, 1 Lintel 1 Solid Top Section	124 lbs.
No. 20-2S	Range Assembly 18" x 29" x 14"	Frame including Hinged Top 2 Grates, 2 Doors, 1 Lintel 2 Solid Top Sections	124 lbs.
No. 30	Charcoal Stove 14½" x 20½" x 24"		60 lbs.
No. 35	Charcoal "Barbecart" 13" x 28" x 27" high		96 lbs.
No. 40	Duplex Grill (Built-in) Assembly	2 Frames and Baskets 16" x 16" x 3" with Anchors 1—12" x 19½" x ½" Grate	52 lbs.
No. 50	Portable Duplex Grill	in cartons 14" x 14" x 14"	22 lbs.
No. 55	Portable Duplex Grill with Warming Section	Grill with leg section Shelf and support Hinged enclosure	30 lbs.
No. 60	Dutch Oven Assembly	1 Dutch Oven Door 1—12" x 12" Ash Door 2—12" x 18" Grates	53 lbs.
No. 70	Universal	2 Channels with Anchors 4—12" x 19½" x ½" Grates 1 No. 2 Crane 1—3" x 3" Angle 48"	95 lbs.

History of a Great Enterprise

by the
Donley Observer



For many moons, as chance afforded
I gathered and securely hoarded
Most every likely looking rock,
Until I had a hefty stock
That I had found on field or beach—
In any spot that I could reach
Or come upon by constant looking,
To build a fireplace for cooking.

The pick and spade were next applied
In excavation deep and wide,
Extending well below the frost.
And then, unaided and unbossed,
Without a trace of sketch or plan,
I laid my stones as fancy ran.
A Donley Unit was my guide,
Assuring all was well inside.
And when, at length, I capped the flue,
I stood for quite a while to view
In silence, but with soul elated,
The masterpiece I had created.

So now you know, kind people, how
I built a place to cook my chow—
A place caressed by sun and breeze,
With shelter of encircling trees—
Enough of shade, enough of sun.
Draw up and split yourself a bun
A fat and feathery bun. Then take
A section of this juicy steak.
Now tell me, as you value bliss,
Have banquets anything on this?

